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PANOPTICON:

POSTSCRIPT;

PART I:

CONTAINING

FURTHER PARTICULARS AND ALTERATIONS

RELATIVE TO THE

PLAN OF CONSTRUCTION

ORIGINALLY PROPOSED;

R Principally adapted to the Purpose of a

PANOPTICON

PENITENTIARY-HOUSE.

By *JEREMY BENTHAM*,
OF LINCOLN'S-INN, ESQ.

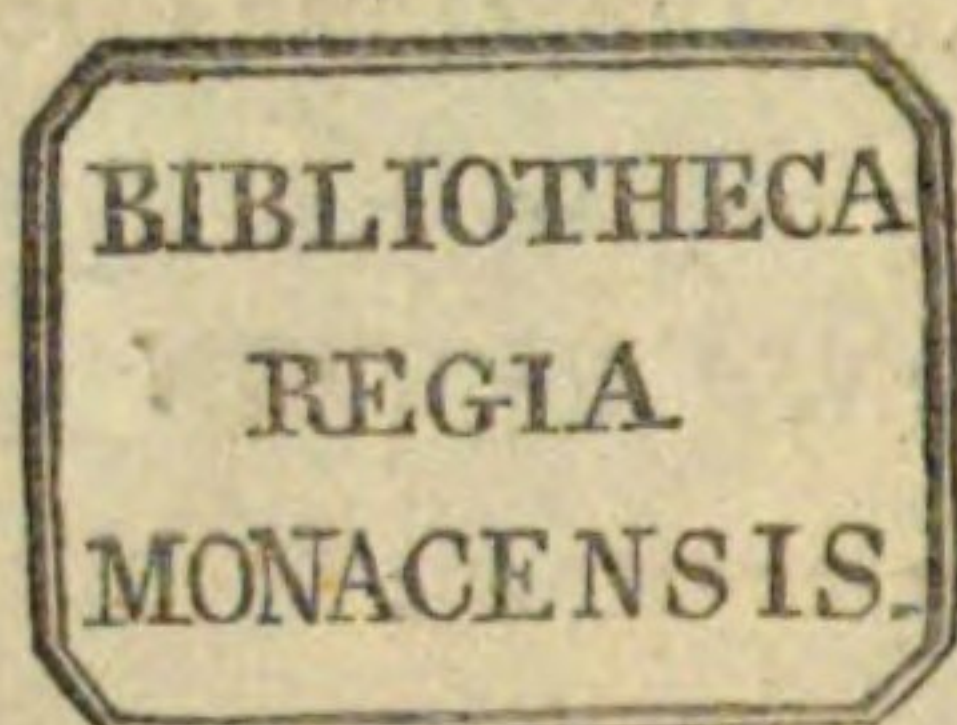
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1791.

Bentham
Panopticon

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POSTSCRIPT.—PART I. ERRATA.

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9	1	For in	read Under
—	4	— 24	— 27
—	5	— 8	— 5
20	7	— practicable	— impracticable
24	23	— favourable, produce	— favourable to
29	10	— which	— in which
34	26	— forgotten	— foregone
39	9	— more of it	— more

ERRATA

ERRATA continued.

Page Line

46	12	—	has appropriated	—	thus appropriated
47	20	—	of the cieling	—	to the cieling
55	10	—	care	—	ease
57	3	—	to have	—	not to have
57	9	—	direction	—	devotion
57	12	—	<i>puto da je</i>	—	<i>auto-da-fé</i>
63	16	—	the employment	—	his employment
68	15	—	us	—	not
69	1	—	marked	—	masked
74	5	—	$\frac{1}{2}$	—	$1\frac{1}{2}$
76	8	—	if a person	—	of a person
86	14	—	be a fingle	—	to be a fingle
90	18	—	nine remains	—	nine remain
92	2	—	in each	—	on each
96	6	—	Chapel—visitors'	—	Chapel-visitors'
97	4	—	Staircase, doors	—	Staircase-doors
99	3	—	Cells	—	Cells in the Dead Part
101	8	—	those upper, read	—	those who go to the upper
101	10	—	attached to it the	—	attached to it, it may
			Prisoners' Galleries and Stair-		be objected that the Pri-
			cases, it may be objected that		soners' Galleries and
			these possess		Stair cases possess
108	25	—	ice stance	—	instance
111	21		after <i>Exit</i> insert: On the left hand of the Diametri-		
			cal Passage is a <i>Staircase</i> leading to the Inspector's		
			Lodge.		
117	1	—	at it origin	—	at its origin
153	23	—	is only	—	his only
155	9	—	distant object	—	distinct object
167	5	—	at observed	—	be observed
179	4	—	Approach	—	the Approach
185	16	—	moral fortification	—	mural fortification
186	2	—	certain supposition	—	a certain supposition
188	11	—	three walls	—	two walls
199	15	—	respiration	—	organs of respiration
204	29	—	temperation	—	temperature
208	6	—	warming-chamber	—	warming-chambers
209	23	—	small stoves	—	such small stoves
211	11	—	on a pe pendicular	—	in a perpendicular.
213	14	—	one	—	air
219	5	—	ariduct	—	aeriduct
220	14	—	w ich without	—	without
230	19	—	The sum	—	The scene
236	3	—	There, rain	—	Here, rain.

In the Table, between p. 165 and p. 167, line 2 from the bot-
tom, for where read while.

PREFACE.

MORALS reformed—health preserv-
ed—industry invigorated—instruction
diffused—public burthens lightened—Economy
seated as it were upon a rock—the Gordian
knot of the Poor-Laws not cut but untied—
all by a simple idea in Architecture!—Thus
much I ventured to say on laying down
the pen—and thus much I should perhaps
have said on taking it up, if at that early
period I had seen the whole of the way be-
fore me.—A new mode of obtaining power,
power

power of mind over mind, in a quantity hitherto without example: and that, to a degree equally without example, secured by whoever chooses to have it so, against abuse.—Such is the engine: such the work that may be done with it.—How far the expectations thus held out have been fulfilled, the Reader will decide.

The Letters which compose the body of this tract, were written at Crecheff in Russia, and from thence sent to England in the year 1787, much about the same time with the DEFENCE of USURY. They were addressed to a particular person, with a view to a particular establishment then in contemplation, (intelligence of which had found its way to me through the medium of an English newspaper) and without
any

any immediate or very determinate view to general publication. The attention of the public in Ireland having been drawn to one of the subjects to which they relate by the notice given not long ago by the Chancellor of the Exchequer, of a disposition on the part of Government there, to make trial of the Penitentiary system, it is on that account that they now see the light through the medium of the Irish press.

They are printed as at first written, with no other alteration than the erasure of a few immaterial passages, and the addition of a Postscript, stating such new ideas as have been the fruit of a more detailed and critical examination, undertaken chiefly with an eye to the particular establishment

last

last mentioned, and assisted by professional information and advice.

In running over the descriptive part of the Letters, the Reader will find it convenient to remember, that alterations, as stated in the Postscript, have been made, though he need not at that period trouble himself with considering what they are: since in either shape the details will serve equally well for the illustration of the general principle, and for the proof of the advantages that may be derived from it.

In what concerns the Penitentiary system, I may be observed to have discussed, with rather more freedom than may perhaps be universally acceptable, a variety of measures

P R E F A C E.

tures either established or proposed by gentlemen who have laboured in the same line. A task this, which I would gladly have avoided: but compleat justice could not otherwise have been done to the plan here proposed, nor its title to preference placed in a satisfactory point of view. Among the notions thus treated it is with pleasure rather than regret that I observe several which on a former occasion I had myself either suggested or subscribed to. I say with pleasure: regarding the incident as a proof of my having no otherwise done by others than as I not only would be done by, but have actually done by myself: a consideration which will, I hope, make my apology to the respectable gentlemen concerned, and assist their candour in recommending me to their forgiveness. If by the light of reciprocal

ciprocal animadversion I should find myself enabled to rectify any errors of my own which may still have escaped me, the correction, instead of being shrunk from as a punishment, will be embraced as a reward.

In point of method and compression something might have been gained, had the whole, Letters and Postscript together, been new cast, and the supplemental matter worked up with the original. But time was wanting; and, if the invention be worth any thing, the account given of it will not be the less amusing or less instructive, for being exhibited in an historical and progressive point of view.

The concluding Letter on Schools is a sort of *jeu d'esprit*, which would hardly
have

have presented itself in so light a form, at any other period than at the moment of conception, and under the flow of spirits which the charms of novelty are apt enough to inspire. As such it may possibly help to alleviate the tedium of a dry discussion, and on that score obtain the pardon, should it fail of receiving the approbation, of the graver class of readers.

PANOPTICON.

POSTSCRIPT.

§ 1. *PRINCIPAL PARTICULARS.*

Principal Particulars either settled or altered, since the first hasty design, as described in Letter II. and imperfectly represented in Plate I. See *Plate II.*

1. **A** NNULAR WELL, or vacancy, all the way up, crowned by an uninterrupted opening *Sky-light*, instead of Stories of Intermediate Annular Area to every two *Stories* of Cells.

2. Cells enlarged in depth, by throwing into them the space occupied in the first design by the *Protracted Partitions*, and by giving to the Upper Row in each pair the same depth as to the Under Row.

PART. I.

B

3. Cells,

2 § 1. *Principal Particulars.*

3. *Cells*, two laid into one.
4. *Cells*, *number of Stories*, six instead of four.
5. *Chapel*, a regular one, now inserted in the center: partly instead of the small Central Area. partly at the expence of the several stories of Inspection Lodge.

6 Instead of three *similar* stories of *Inspection-Lodge*, in the two upper stories Annular *Inspection-Galleries*, backed by the Chapel-Galleries, in the lowest story annular *Inspection Gallery*, enclosing a circular *Inspector's-Lodge*.

7. No *Cupola*, a part inserted in the first hasty sketch, rather by way of finish, than with a view to any special use.

8. The *Dead part*, viz. that part of the circuit in which there are no Cells, here occupying 5-24ths of the circuit instead of 2-48ths, *i.e.* 1-24th: in height five stories out of six, instead of two out of four, and covered by a *projecting Front*.—N. B. This Dead part, depending in point of magnitude and disposition so much upon local and other individual *data*, could not well be settled in all its parts, and accordingly is not represented in the draught.

9. *Communications*, now partly altered, partly fixed: particularly the only thorough passage, termed

termed the *Diametrical Passage*, now cut through a sunk story, and at its exit, joined by a *Covered-Way*, projected downwards from the lowermost Inspection-Gallery, and terminating in a central *Look-out* for the inspection of the yards.

10. The form *polygonal* (a double duodecagon, or polygon of 24 sides) instead of circular.

11. Diameter—According to the present draught 120 feet (exclusive of the projecting Front) instead of 100 feet, the diameter thought of in the original imperfect sketch with a view to local circumstances. *

12. *Materials*—Iron much employed, and used for the Cell-Galleries, for Staircases, for Doors, and even for Pillars, chiefly hollow, instead of brick, stone, or wood.—*Plaster*, proposed for the Cell-floors.

13. Mode of supplying the building with water: chiefly by an *Annular Cistern* running round the top of the building: under the roof, immediately within the wall.

* Twenty foot, the addition made to the diameter, multiplied by three gives 60, the addition to the circumference: this divided by 24, the number of the cells, gives $2\frac{1}{2}$, the addition made to each cell at the outside of the wall; i. e. at the extreme circumference, round which the polygon is circumscribed.

14. Mode of *Warming* the Building: by streams of fresh air, heated in the new way by passing through the inside of vessels, to which fire is applied on the outside: instead of stagnant air, heated by its contiguity to hollow receptacles to which fire is applied on the inside, as in the ordinary German stoves and hot-house flues.

15. *Outlets or External Area*, settled in subordination to the inspection principle: the *Covered-Way* a semi-diameter of the area, terminating in a central *Look-out*, instead of encompassing the area, and being attached to the surrounding wall.—
See Plate 3.

16. *Approach* and surrounding fences, now first settled: and that too in strict subordination to the same principle. *See again Plate 3.*

N. B. The degree of anxiety, displayed in the plan of exterior fortification there exhibited, had a more particular view to the state of things in Ireland than in England.

With relation to most of these points further elucidation will be necessary: and with regard to several of them something in the way of justification will be expected: such will be the business of the ensuing pages.

§ 2. *GENERAL VIEW*
OF THE WHOLE EDIFICE.

In a General View of the whole Building, according to its present form, three very different though connected masses may be distinguished—

1. **T**HE *Projecting Front*: a rectangular mass, which, being designed to go towards furnishing habitation for the Officers of the Establishment, has little to distinguish it from a common dwelling-house.

3. The *Cellular* part: including as well that part of the circuit which is actually disposed of in cells, as the *Dead part*, which for the sake of stability it is thought necessary to lay out in the cellular form, although for want of light, as being covered by the front, it would not be conveniently applicable to the same use.

3. The *Inspection-Tower*: comprehending on one story the lowermost Inspection-Gallery, with the

inclosed Inspector's Lodge; in another, the middlemost Inspection-Gallery, in which is inclosed the lowermost Chapel-Gallery, and within that again the Area of the Chapel; * on a third, the uppermost Chapel-Gallery.

The Cellular mass, together with the Inspection-Tower inclosed within it, compose the characteristic part of the building: the projecting Front forms an accidental and inessential appendage.

The whole of the characteristic part may be conceived as composed of two Towers, one within the other, with the Annular Well between them. †

A particularity that will require to be constantly kept in mind is, that in the two polygono-cylindrical masses, the circumscribing and the inscribed, not only the numbers of the stories do not agree, the latter having but half the number of the former, but that no one story in the interior part coincides in point of level with any one story of the ex-

* The Area of the Chapel cannot perhaps in strictness be said to form part of the same story with the lowermost Chapel-gallery. The floor being several feet below the level of that of the Gallery, may be looked upon as forming in that part a story by itself. But this want of exact coincidence is no more than what occurs frequently in common houses.

† By analogy, the Inspection-Tower might be termed the *medullary* part: the cellular part, the *cortical*.

terior

terior that surrounds it. This want of coincidence is not an accidental but a characteristic and almost essential circumstance: since it is by being placed about midway between the floor and the cieling of the lowermost of each pair of Cells that one floor in each story of the Inspection Tower affords a perfect view of two stories in the Cellular part.

Principal Dimensions of the *Polygonal Part*, comprehending the *Cellular Part*, with the included *Inspection-Tower*, being the whole of what is represented in Plate II.

Widths.

Semidiameter of the area of the Chapel,		
including the central aperture,	—	15
Width of a Chapel-Gallery,	—	12*
Width of an Inspection-Gallery †,	—	5

* In some of the impressions of the Draught, by mistake 9 feet only

† In some of the impressions of the Draught, the lowermost of these Galleries has three feet of addition given to it, at the expence of the included Lodge: this addition it is now proposed to take away, for the reasons given in sect. 8.

Width of the Annular Area in the same story, and Well over it,	— —	7*
— of the Grated Annular Passage, encompassing the Annular Area on the funk story, being the same width as that of the Cell-Galleries above,	—	4
Depth of a Cell within-side,	— —	14†
Thickness of the Wall,	— — —	5
	Total,	60
Add the other semidiameter,	—	60
	Total diameter	120

* In some of the impressions of the Draught, by mistake 11 feet.

† In some of the impressions of the Draught, by mistake 13 feet only. Of the four additional feet thus given to the Intermediate Well, one was at the expence of the Cells, the three others at the expence of the Chapel-Galleries. It is now, however, proposed to allow it 1 foot, at the expence of those Galleries, making at the diameter 8 feet instead of 7 : exclusive of the 4, which, to the purpose of ventilation, may be considered as little different from so much void space, being so imperfectly occupied by the Cell-Galleries, constructed of open work like balconies.

In

In the Floor of the Chapel.

Semidiameter of the Inspector's Lodge,			
thickness of the wall included,	—		24
Width of the Inspection-Gallery,	—	—	8
			—
			32
Add the other semidiameter,	—		32
			—
Diameter of the building at the outer cir-			
cumference of the Inspector's Gallery			
in that story,	—	—	64
Which is the same as in the other stories.			

*Cellular Part alone.**Heights.*

From the floor of the sunk story to the			
floor of the lowest Cell level with the			
ground, including the thickness of the			
floor,	—	—	7—6
From the floor to the crown of the			
arch in each Cell,	—		8—0
Thickness of the arch at the crown,			1—0
Height of the first floor of Cells from			
the ground, including the thickness			
of the floor above,	—		9—0
— of the second floor,			18—0

Height

Brought over	—	—	7—6
Height of the third floor,		27—0	
— of the fourth floor,		36—0	
— of the fifth floor,		45—0	
— of the sixth floor,			54—0
From the crown of the arch on the outside to the lowest part of the flanting roof within the walls,		3—0	
From thence to the level of that part of the roof where the An- nular Sky-light begins,		5—0	
From thence to the level at which the Sky-light terminates,	—	5—6	
Thickness of the roof in that part,		1—0	
		—	14—6
Total depth of the Annular Well	76—0		76—0
Height of the building from the ground in the Cellular part,		69—6	

Inspection Tower alone.

Heights.

From the intermediate area to a level with the floor of the lowermost story of cells,	7—6	
Thence to the floor of the Inspection Gallery	4—0	
		11—6

Brought over	—	—	11—6
From the floor of the Inspection Gallery, to the roof of ditto, including the thick- ness of the floor and roof,	—	—	8—0
Void space between the lowermost and the middlemost Inspection Galleries,	—	—	10—3
Height of the middlemost Inspection Gal- lery, including the thickness of the floor and roof,	—	—	7—6
Void space between the middlemost Inspec- tion Gallery and the uppermost	—	—	10—3
Height of the uppermost Inspection Gallery, in front, including the thickness of the floor and roof,	—	—	7—6
Void space between the uppermost Inspec- tion Gallery and the uppermost part of the Roof where the annular sky-light terminates exclusive of the thickness of the roof,	—	—	20—0
Thickness of the roof	—	—	1—0
Height from the floor of the sunk story and annular well as before,	—	—	76—0

Inspector's Lodge alone.

Widths.

From the center to the circumference of the of the central apertures in the floor and the cieling *	— —	6
Of the annular space between that and the partition dividing the Lodge from the surrounding Gallery, being the space un- derneath a Chapel-Gallery, added to that underneath the Chapel Area;	—	21
Total semidiameter of the Inspector's Lodge, †	27	
Add the other semidiameter;	—	27
Total diameter;	—	54

* The diameter here given to these apertures is the same as that given to the opening Sky-light over them: but they admit of extension, as the demand for light or any other consideration may require.

† In some of the impressions of the Draught but 21: the difference, 6 foot, being owing, half of it to the three foot of addition given by mistake to the Annular Well at the expence of the included Inspection Tower, the other half, to the addition (now proposed to be taken back) given within that Tower to the Inspection Gallery in this story, at the expence of the included Lodge.

§ 3. ANNULAR

§ 3. *ANNULAR WELL.*

Annular Well, instead of Stories of Intermediate Annular Area.

HOW to give to the Inspectors access to the prisoners in their Cells? In the first design, stories of Intermediate Area, serving as passages, were allotted to this purpose: in number, agreeing with the Stories of Inspection Lodge: in point of level, coinciding, as was necessary, with the lowest story of each pair of Cells. Apertures, cut here and there through the uppermost of these stories of passages, were to give light and air to those below.

For what purpose these passages? For communication, and no other.—But the more I considered the more plainly I perceived, that, for uninterrupted communication there would be no use. The first succedaneum that presented itself was a multitude of *flying Staircases* of open iron-work: at last I satisfied myself, that two flights of Staircases, from top to bottom, for the prisoners, and short passages joining

joining them from the several stories of the Inspection-part, would answer every purpose*. Out went accordingly the Stories of Intermediate Area. Space took the place of matter, from the bottom of the building to the top: and thus a *Well* was formed all the way up, crowned by an uninterrupted *Sky-light* as broad, and opening in as many places, as possible.

Airiness, lightfomeness, economy, and increased security, are the evident results of this simple alteration: above all things, airiness, the want of which it might not by any other means, have been very easy to remove. This vacuity does service in a thousand shapes: a ditch in fortification; it is a chimney and much more than a chimney in ventilation. In this point of view the distance between the particular ceiling and the general sky-light is, so much added to the height of ceiling in each Cell: so that instead of 6 Cel's, each 8 feet high and no more, we have, in fact, 6 Cells, one of 66 foot, another of 57, a third of 48, a fourth of 39, a fifth of 30, and the lowest not less than 21 feet.

Communication, impeded in as far as it is dangerous, is, instead of being retarded, accelerated, where it is of use. To the Inspector, in his Gallery, a single *Pole* answers, as we shall, see the

* See below communications.

purpose of many staircases: by this simple implement, without quitting his station, he gives the prisoners egress from, and regress into, their Cells. Machines, materials of work, and provisions, find a direct passage by help of a *Crane*, without the tedious circuit of a staircase: whence less width of staircase may suffice. The posts, at which, were iron gratings of no avail, it would be possible for a desperate prisoner to attack an Inspector in his castle, are reduced to three narrow passages on each side: and those too crossed and guarded by doors of open-work, exposing the enemy, while they keep him at a distance*. Of all this more particularly in its place. A short hint of the several advantages could not well be omitted in speaking of the part to which they are due.

Add to these another, nor that an inconsiderable one, in point of extent and facility of *Inspection*: for though there are but two Stories of Cells, of which an eye situated in a Story of the Inspecting Tower can reach every part alike, yet in addition to this perfect view partial views are thus opened, from which the management may derive, as we shall see, very material assistance.

† This refers to the construction of the *Dead part* of the circuit, of which a little further on.

What degree of support the Inspector of each Story of Inspection Gallery derives from the view thus acquired by his colleagues in the two other Stories, may be seen by the lines described for that purpose in the Cells. They are drawn as if from an eye stationed in the back part of the several Inspection Galleries. The figures 1, 2, 3, mark the Stories of Inspection Gallery from which they are respectively drawn. When two of these lines proceed from the same Cell, the letter *s* denotes that one of them which was drawn from the height of the eye of a middle sized man when *sitting* and stooping to read or write: say three feet six inches: the letter *u* that drawn from the eye of the same man standing *upright*: say five feet five inches.

From this particularity in point of *construction*, the following observations may be deduced with a view to *management*.

1. There is no Cell of which some part is not visible from every story in the Inspection-Tower: and in the lowermost story, not only from the Inspection Gallery, but even from the included Inspector's Lodge.

2. The part thus visible is considerable enough in point of room to receive, and expose perfectly to view

view, a greater number of Prisoners than it can ever be proposed to lodge in the same Cell.

3. No Prisoner can ever make any attempt upon the grating that forms the interior boundary of his Cell, without being visible to every one of the three stations in the Inspection-part.

4. During meal-times and at church-times, by stationing the Prisoners close to the grating, two out of three Inspectors may be spared.

5. The Cell-Galleries are, every one of them, perfectly commanded by every station in the Inspection-part.

6. An attempt can scarcely if at all be made on a window in the third story of Cells, without being visible, not only to its proper story, (viz. the 2d) of the Inspection-part, but likewise to the first, nor upon a window in the 4th story of Cells, without being visible, not only to its proper story (viz. the 2d) of the Inspection-part, but likewise to the 3d. Those of the 4th story at least, as well as the two above it, are sufficiently guarded by their height: upon the supposition that the Cells afford no ropes, nor materials of which ropes could be made in the compass of a night, by persons exposed constantly to the eye of a patrolling watchman.

7. To give to an Inspector at any time the same command over the Cell of another Inspector as over his own, there needs but an order, drawing a line of limitation in the Cells in question, and confining the inhabitants within that line. So long as a prisoner keeps within it, he continues visible: and the instant he ceases to be so, his very invisibility is a mark to note him by.

§ 4. *PROTRACTED PARTITIONS
OMITTED.*

Protracted Partitions omitted; or rather, taken into the Cells.

IN the original design the Protracted Partitions had two uses: 1. To cut off all view of distant Cells: 2. To cut off converse with the Cells contiguous on each side. In securing this effect a large quantity of brick-work, and an annular space of 3 or 4 foot all round were expended.

Upon maturer consideration it appeared, that the same effect might be equally secured by flighter and cheaper means; and the space thus sacrificed allotted to some other more necessary purpose. Views of the opposite semicircle may be intercepted by sheets of canvas filling up the intervals left by the stories of Inspection-Gallery.* View and

* Making the circuit round the area of the Chapel, and omitting the Dead part, it will be found that three pieces, each in length about 70 feet, and in width, two about 5 feet each, and the third about $8\frac{1}{2}$ feet will suffice.

converse, as between Cells contiguous or adjacent, by barriers of the slightest nature interposed within the Cells: such as a netting of wire for example, or even of pack-thread. The object is rather to mark the line than to oppose a physical obstacle to the violation of it. If transgression be rendered practicable without discovery, it is sufficient: since it is not here and there an instance that can produce any material mischief, or to the delinquent any gratification capable of paying for the danger. By this slight and flexible barrier no room need be consumed. As well at top as at bottom it will give place to furniture: such as a shelf, or the foot of a loom, a bedstead, or a table: and upon order given, it may be removed at any time.

When the Protracted Partitions were contrived, it was with a view to the assumed necessity of absolute solitude: that plan being, for reasons given below, now relinquished, neither this expedient, nor those now proposed to be substituted to it in the same intention, are any longer of the same importance.

If the interception of view can be considered as an object entitled to much attention, it can only be as between the different sexes. Of the provision made for that purpose, a full account will be found below.

§ 5. CELLS,
DOUBLE INSTEAD OF SINGLE.

THE change is not a trifling one. It will not lightly be acceded to: the expediency of it will be expected to be fully and satisfactorily made out. It shall be so: by reason, by authority, and by practice. In the Letters I assumed solitude as a fundamental principle. I then copied, and I copied from recollection. I had no books. I have since read a little: I have thought more.

Not that the Panopticon system has any interest in the change. You may apply it indeed to mitigated seclusion, but so you may with equal facility to absolute solitude. Applied to the degree of mitigated seclusion here proposed, it clears the punishment of its inconveniences, and gives it the advantages that have been looked for from solitude: applied to solitude, it enables you to screw up the punishment to a degree of barbarous perfection, never yet given to it in any English prison, and scarcely to be given to it by any other means.

22 § 5. *Cells, Double instead of Single.*

2
Double Cells suppose two prisoners at least in company ; and admit of three, or even, in case of necessity, four : and that with much less inconvenience, as we shall see, in point of room, than would result from the putting of two into a Cell designed only for one. As to any greater number, I lay it out of the question. The choice lies, it must be remembered, not betwixt solitude and crowded rooms, but betwixt absolute, perpetual, and universal solitude, on the one hand, and mitigated seclusion in very small assorted companies, on the other : companies in the formation of which every regard might be paid, and naturally would be paid, to every sort of consideration by which expediency can be influenced—to age, temper, character, talents, and capabilities. Single Cells throughout, that is a number of Cells equal to that of the prisoners for whose reception they are designed, Cells in which, under the Panopticon discipline, they are to work, and eat, and attend Divine service, as well as sleep, and out of which, unless for the purpose of being aired and exercised, they are never to stir, suppose them doomed, or at least meant to be doomed, during the whole time of their imprisonment, to the state of unmitigated solitude above mentioned : that time for the most part, a term of not less than seven years.

Of

Of perfect solitude in the penitentiary discipline I know but of one use: * the breaking the spirit as the phrase is, and subduing the contumacy, of the intractable. In this quality it may be a necessary instrument: none at any rate can be more unexceptionable. None can be more certain in its

* Mr. Howard knew no other. "The intention of this" viz (*solitary confinement*) "The intention of this (says he in "Account of Lazarettos, p. 169) I mean by day as well as by "night, is either to reclaim the most atrocious and daring criminals; to punish the refractory for crimes committed in prison; "or to make a strong impression in a short time, upon thoughtless and irregular young persons, as faulty apprentices and the "like. It should therefore be considered by those who are ready "to commit for a long term petty offenders to absolute solitude, "that such a state is more than human nature can bear without "the hazard of distraction or despair: The beneficial effects of "such a punishment are speedy proceeding from the horror of "a vicious person left intirely to his own reflections. This may "wear off by long continuance, and a sullen insensibility may "succeed."

And in another note, p. 192, "A short term would probably "do more to effect a reformation than three or four months "confinement; as it is generally found that in the first two or "three days prisoners seem to have their minds most affected and "penitent."

Of these notes the former, it is true, is prefaced with a "wish "that all prisoners had separate rooms, for hours of thoughtfulness and reflection" (says he) "are necessary." But by separate rooms all that he had in view was rooms different from

effect.* In what instance was it ever known to fail?

But in this quality the demand for it can be but temporary. What it does, if it does any thing, it does quickly: better, according to Mr Howard, in two or three days, than in more. [Account of Lazarettos, p. 192.] Why then at an immense expense set up a perpetual establishment for the sake of so transitory an use?

In the character of a permanent article of discipline, continued throughout the whole of the confinement, if it were thought necessary on any account, it must be for one or other of two purposes: 1. To prevent the spread of mischievous instruction,

the crowded rooms he had been speaking of in the text. In the latter it is true the sort of thoughtfulness and reflection he speaks of will with difficulty find place. The busy scenes that pass in crowds keep the mind in a state of fermentation and confusion that leaves little leisure for the admission of other thoughts. Far otherwise is it in those small societies, societies composed of two or three only, which not having fallen under his observation do not appear on this occasion to have been in his view. Unapt to give rise to obstreperous mirth, they are peculiarly favourable, produce that sort of calm reflection which is the concomitant of confidential intercourse.

* Darkness and fasting, one or both, must be added where it is thought necessary the effect should be speedily produced: as in the case of English Juries.

or 2. To prevent conspiracies for the purpose of escape.

It is not necessary for either purpose. I mean always in contradistinction to the mitigated plan of seclusion, which gives to each man but one or at most two companions. 1. Not for the former—In the cases in which mischievous inclinations have been apprehended, and in which a plan of solitude, more or less steadily adhered to, has been employed or thought of by way of remedy, the following circumstances have generally concurred. 1. The *multitude* of the prisoners collected together *large* and indeterminate: the *composition* of that multitude *not* capable of being regulated by any power of *selection*: the whole multitude left together, during the whole, or almost the whole of the four and twenty hours, *without inspection* or controul: and that in a narrow space, where, no one however desirous, could escape from the conversation of any other. 4. All of them at liberty, without any other check than that of poverty, to supply themselves to any excess with the means of intoxication. 5. A part more or less considerable of that number about to be *turned loose again* upon the public in a *short* time, with the lessons of mischief fresh in their ears, and ready at the

the first opportunity to apply the theory to practice. Under the arrangement to which, upon maturer consideration, I have given the preference in comparison with the first hasty conception of perpetual solitude, not one of the above circumstances has place: The number of the prisoners proposed to be put together is very small: in general but two, at the utmost not more than four: the composition of these little groupes dependent upon the ruling powers in the first instance, and capable of being varied every moment upon any the slightest intimation which experience or even suspicion can afford: every groupe, and every individual in it, exposed more or less to the scrutiny of an inspecting eye during every moment of their continuance there: all means of intoxication for ever out of reach: the degree of seclusion determined upon, capable whatever it be of being, thanks to the all-efficient power of the Panopticon principle maintained inviolate, while every plan of solitude yet attempted has been broken in upon, and its purpose in great measure frustrated by occasional associations, and the pernicious instruction, should any such be communicated, not capable, were it to find a learner ever so ripe for it, of being applied to practice for many years to come.

If

If from reason we turn to example, an instance where the plan of perpetual, total, and universal, solitude has been adopted, and steadily adhered to, will not any where I believe be found. Either it has not been aimed at: or, if aimed at in principle, it has been relented from in practice.

In the Wymondham Penitentiary-House, each prisoner, it is true, has a separate Cell to sleep in: it is however only upon occasion * that he works there. If he does not work there, he must work, and unquestionably does work, in company: viz. in the work-room of twenty feet four inches by ten feet:† which was not destined for a few. As a preservative against mischievous instruction, what then at those times, that is, throughout the day, becomes of solitude?

In the Gloucester Penitentiary-House, as well as in the other Gloucester prisons, solitude, under the two modifications there adopted, viz. with and without the concomitant of darkness, is with great propriety, and in conformity to the principle I am contending for, “directed merely as a punish-

* *When necessary.* See Sir T. Beevor's Letters in Annual Register for 1786, Let. I.

† Ibid. Let. III.

“ment for refractory prisoners, and to enforce the
“discipline of the prison.”

In the Penitentiary-House indeed it is provided that, during the hours of rest, the prisoners shall be
“*kept entirely separate :—in separate Cells.*” So much for the night. How is it all day long?—
“*During the hours of labour,*” they are to be “*kept separate*”—how?—absolutely? No: but only “*as far as the nature of the employment will admitt.*”

What follows immediately after I do not perfectly comprehend. “When the nature of the
“employment may require *two* persons to work
“together,” (it does not say *two persons or more*)
“the task-masters, or assistant, (it is said) shall be
“present to attend to the behaviour of such offenders, who shall not continue together, except
“during such hours of labour.” How is this? not more than two persons ever to work together? nor even two without a task-master, or his assistant, to attend them? Upon any idea of economy can this be looked upon as practicable? One man at 50l. or 30l. or 25l. a year,* to do nothing but look on, for every two men, who are expected to work?

§ The salaries allowed by these regulations to a task master, turnkey, and assistant turnkey. Ib. Part I. p. 18.

The Governor, is allowed, I observe, for but one subordinate of each of those descriptions. Are there then to be but three pair of prisoners on the whole establishment, to whom the indulgence of so much as a single companion is to be allowed?—Are all the rest to remain in solitude for the want of an attendant to each pair?—This cannot be. By *two* then, we are to understand *two or more*: in short here, as at Wymondham, there are working-rooms in common, which none are to be without an Inspector, stationed in some part of the room.—But in this case too, what becomes of solitude?

If the benefit expected from solitude in the character of a preservative, were not given up by this relaxation, they would be by another. The following I observe prescribed, as one of the four degrees of punishment, “to be applied in the discipline of *all* the prisons,” the Penitentiary prison therefore among the rest. The prisoner though “on working-days, confined to his cell, except during the times of airing,”* and tho’ “removed *singly* to the chapel,” is,

* As to *airing*, a plan for that purpose will be found below, which does not require the slightest infringement upon whatever plan of seclusion may be fixed upon as most eligible.

“provided his, or her behaviour, be orderly or “decent,” to be “allowed on Sundays, to air in the courts, in the society of his or her class.”* Under this indulgence too, what becomes of the *antiseptic* regimen? May not the same person who opens a school of corruption as soon as the keeper’s back is turned, be orderly and decent during his presence? May not there be *eye-prisoners*, as well as *eye-servants*? Cannot the arts of housebreaking and pilfering be taught on Sundays, as well as on week-days: cannot they be taught quietly and in a low voice?

So much as to evil instruction. Now as to safe custody. Upon the Panopticon plan at least, absolute solitude is equally unnecessary to this purpose. Towards effecting an escape, what can two or three do more than one, confined as they are by iron grates while they are within the prison, and by walls when they are without? and in either case, never out of the eye of an Inspector, who is armed and out of reach of attack, and within reach of whatever assistance he can desire? And this too, as we shall see, but a part of the securities with which the system is armed: for every thing cannot be said at once, nor repeated at each sentence.

Upon

* Ibid. Part II. p. 10.

Upon the common plans, absolute solitude while the prisoners were out of sight might, for aught I can say, be a necessary precaution: at least it cannot be said to be an useless one. In the course of sixteen hours a good deal might be done by two or three persons, steeled against danger, reckoning life as nothing, and secure of not being observed.

If perpetual and unremitted solitude is not necessary either to prevent the spread of mischievous instruction or to prevent escapes, to what other purpose can it be either necessary, or of use?—To reformation?—But that you have already, either without any solitude, or by the help of a short course of it. What further proof would you wish for, what further proof can human eyes have, of such a change, beyond quietness, silence and obedience?

To the purpose of example? The effect in the way of example, the effect of the spectacle, receives little addition from the protracted duration of the term.

Are you afraid the situation should not be made uncomfortable enough to render it ineligible? There are ways enough in the world of making men miserable without this expensive one: nor if their situation in such a place were made the best
of

of, is there any great danger of their finding themselves too much at their ease. If you must torment them, do it in a way in which somebody may be a gainer by it. Sooner than rob them of all society, I would pinch them at their meals.

But solitude when it ceases to be necessary becomes worse than useless. Mr. Howard has shewn how. It is productive of gloomy despondency, or sullen insensibility. What better can be the result, when a vacant mind, is left for months, or years, to prey upon itself?

This is not all. Making this lavish use of solitude is expending an useful instrument of discipline in waste. Not that of *punishments*, or even a proper variety of punishments, there can ever be a dearth: I mean of what is usually in view under that name—suffering employed in a quantity predetermined, after an offence long past. But of instruments of *compulsion*, such as will bear scrutiny, there is no such great abundance.

Starving thus employed, is open to suspicion, and may not always be practicable, without prejudice to health. Acute applications, such as *whipping* or *beating*, are open to abuse and still more to suspicion of abuse. Applied in this way they would be execrated under the name of *torture*.

Solitude

Solitude thus applied, especially, if accompanied with darkness and low diet, is torture in effect, without being obnoxious to the name.

Compared to that mitigated degree of seclusion which admits of allowing two or three to a Cell, it is unthrifty in a more literal sense. Pecuniary economy must be sacrificed to it in a thousand shapes. 1. It enhances the expence of building. 2. It consumes room: 3. It cramps the choice of trades: 4. It cramps industry in any trade.

1. It enhances the expence of building. Admit of Double Cells instead of Single, and observe the saving. Half the number of the Partition-Walls: a considerable part of the expence of warming: half that of lighting: half the apparatus, whatever it be, dedicated to cleanliness: and the expence of water closets, upon the most perfect plan, need the less be grudged.

2. It consumes room. 1. Admit of Double Cells, you gain to the purpose of stowage and manufacture, the space occupied by the Partition-walls you have thrown out. 2. It precludes the saving that may be made in Double Cells, by putting together two sorts of workmen one of whom required more room than the average allowance, the other less: a weaver for example, and a shoemaker.

PART I.

D

3. It

3. It cramps the choice of employments. 1. It excludes all such as require more room, than you would think fit to allow to your Single Cell. 2. It excludes all such as require two or more to work in the same apartment. *

4. It cramps industry in any employment. 1. It precludes an experienced workman from having boys given to him for apprentices. 2. Nor probably would the same quantity of work be done by two persons in a state of solitude, as would be done by the same two persons in a state of society, at least under the influence of the inspection principle. Who does not know the influence that the state of the spirits has upon the quantity of the work?†

* I do not pretend to say that even in Single Cells employments would be to seek: or that there is any reason to strain a point for the sake of admitting employments that require an extraordinary measure of room, as if the profitableness of employments were in uniform proportion to the quantity of room they required. I would not therefore be at a great expence in building for the vague chance of giving admittance to trades, which by their difference in point of profitableness might do more than pay for the difference in point of expence in building. What I said in the Letters I say still. All I mean here is, that if a latitude in that article can be obtained without any additional expence, the advantage ought not to be forgotten.

† True it is, that two boys or two idle men, if put together without motives for working, would be apt enough to play or lounge

Sequestered society is favourable to friendship, the sister of the virtues. Should the comrades agree, a firm and innocent attachment will be the natural fruit of so intimate a society, and so long an union.

Each Cell is an island: the inhabitants, shipwrecked mariners cast ashore upon it by the adverse blasts of fortune: partners in affliction, indebted to each other for whatever share they are permitted to enjoy of society, the greatest of all comforts.

Should disagreement intervene, how easy will separation be, and what should hinder it? should the

lounge the whole time, and not work at all. True it is also, that after having had experience for a certain time of absolute solitude debarred from all means of employment, the most arrant idler that ever lived would be apt to fly to almost any employment as a relief. But the question here is, not between a recluse without the means either of work or play, and two idlers possessing the means of play without the motives to work, but between one person in solitude, and two others in society, neither the one nor the two having the means of play, but with regard to work, all having as well the motives as the means.

What more proverbial than the briskness of the Cobler's work, and the cheerfulness of his note? But where would be his cheerfulness without the amusive spectacle of the sort of society afforded him by the flux and reflux of the passing throng?

mischief be the result of ill nature or turbulence of one alone, the remedy is at hand—consign him to solitude till tamed. Take from him the blessing, till he has learnt to know its value : punish him in the faculty he has abused.

A fund of society will thus be laid up for them against the happy period which is to restore them to the world. A difficulty will thus be obviated which has been remarked as one of the most unfortunate concomitants of this mode of punishment, and as having but too powerful a tendency to replunge them into the same abandoned courses of life which brought them to it before. Quitting the school of adversity, they will be to each other as old school-fellows, who had been through the school together, always in the same class.

Let us keep clear of mistakes on all sides. There are four distinctions we should be careful to observe in regard to solitude. One is, between the utility of it in the character of a temporary instrument applicable to a temporary purpose, and the necessity of it, in the character of a permanent ingredient in the system of discipline. Another is, between the peculiar effects of solitude and the advantages which are equally obtainable by means of sequestered society, in small assorted com-

companies. A third is, between the effects of such associations, under the common plan and under the all preservative influence of the inspection principle.

A fourth is, between the duration the solitary discipline is capable of requiring in a Penitentiary House, and that which it may possibly be of use to give to it in a House of Correction. It may be longer in the latter.* Why? Because in a Penitentiary House all it can be wanted for is to produce immediate submission : for, as to reformation and change of character, years are remaining for that task : the offender is not returned from thence into unlimited society. In a House of Correction, the term being so much shorter, the remedy must be so much the more powerful. If the reformation of the offender is not compleated in his solitary Cell, there is no other place for it to be continued

* Though even there not a long one. Hear Mr. Howard, in a note before referred to. " In all manufacturing towns" (says he, p. 192) " it would be proper to have solitary Cells for the
 " confinement of faulty apprentices and servants for *a few days*,
 " where they should be constrained to work, and have no visitors,
 " unless Clergymen : for a short term would probably do more to
 " effect a reformation, than three or four months confinement ;
 " as it is generally found that in the first two or three days pri-
 " soners seem to have their minds most affected and penitent."

in: for from thence he is returned to society at large.*

One thing is good for phyfic, another thing for food. Would you keep a man upon bark or antimony?

Rejecting then the idea of absolute solitude, I lay two of the Cells proposed in the original draught into one. Two accordingly is the number I consider as forming the *ordinary complement* of the Double Cell thus formed: *three*, if three are any where to be admitted, I stile a *super-complement*: *four*, a *double complement*.

The degree of extensibility thus given to the establishment seems a very considerable advantage: the number is not rigorously confined to the measure originally allotted to it: provision is made for the fluctuation and uncertainty naturally incident to the number of inhabitants in such a house. Tho' two should be deemed the properest complement for a

* I speak with a view to the common plans. In a Panopticon House of Correction, beginning, where necessary, with a very short course of solitude, I would allot the rest of the term to a state of mitigated seclusion. But in many cases where a long term is prescribed without distinction or thought about the discipline that will be pursued, the short course of solitude would be sufficient of itself.

general one, even so considerable an one as four, especially if not universal does not seem to threaten any formidable inconvenience. As to safe custody and good order, four is not such a number as can well be deemed unmanageable: if it were, how would so many more be managed all day long in the work-shops, and that without the benefit of invisible inspection, as on the common plans? As to room, four would have much more of it in one of these Double Cells, than two would have in a Single Cell formed by the division of such a Double Cell into equal parts. A partition in certain cases excludes from use a much greater space than that which it covers.*

Under this arrangement, solitude in its character of a temporary instrument is by no means laid aside. On the contrary it is made applicable, to a greater, indeed to an almost unlimited extent, and what is more, without any additional expence. Two I call, as before, the *ordinary complement* for these Double Cells. Conceive the whole number of the Cells provided with their ordinary comple-

* Thus in a room of twelve foot wide you might join lengthways three tables of four foot in length each: divide the room into two equal rooms by a partition, you can place but two such tables in the same direction, though the partition be but a lath.

ment: to consign a delinquent to solitude, there needs no more than to deprive him of his companion, and by transferring the companion to another Cell, give that one other Cell a *super-complement*. In this way by only giving to half the number of Cells a super-complement, half the number of prisoners might be consigned to solitude at once: a multitude of solitaires beyond comparison greater than what is provided for in any prison in which solitude is not meant to be the constant state of the whole. Even supposing the Cells universally provided with a super-complement, give two thirds of them a double-complement, and you may still consign to solitude one third of their inhabitants at the same time: and so, in case of an universal double complement one quarter, upon no worse terms than the putting five persons into a space, which in the ordinary way of providing for the inferior classes, is often made to hold a greater number without any very decided inconvenience.

In estimating the effects of putting two or three or four prisoners together (all under inspection, it must be remembered, all the while) the advantage of grouping them at the discretion of the Inspector must not be overlooked. Very inattentive indeed must he have been to this capital part of his business, if in a very short time the character of every

individual among them be not known to him as much as is material to his purpose. He will of course sort them in such a manner as that they may be checks upon one another, not assistants, with regard to any forbidden enterprise.

Let us not be imposed upon by sounds: Let not the frightful name of *felon* bereave us of the faculty of discrimination. Even antecedently to the time within which the reformatory powers of the institution can be expected to have had their effect, there will be perhaps no very considerable part of the whole number, whose characters need inspire much more apprehension than would be justified by an equal number of men taken at large. It is a too common though natural error to affix to this odious name, whatsoever difference of character may accompany it, one indistinguishing idea of profligacy and violence. But the number of the persons guilty of crimes of violence, such as robbery, the only sorts of crimes which in such an establishment can be productive of any serious mischief, bear comparatively speaking but a small proportion to the whole. Those whose offences consist in acts of timid iniquity, such as thieves and sharpers, even though trained to the practice as to a profession, are formidable, not to the peace of the
 establish-

establishment, but only in the capacity of instructors to the rest: while the qualities of perhaps the major part, whose criminality is confined to the having yielded for once to the momentary impulse of some transient temptation, are such as afford little or no danger in any shape, more than would be afforded by any equal number of persons in the same state of poverty and coercion taken at large. They are like those on whom the Tower of Siloam fell, distinguished from many of their neighbours more by suffering than by guilt. Drunkenness, it is to be remembered, the most inexhaustible and most contagious source of all corruptions, is here altogether out of the question. Intoxication cannot be taught, where there is nothing (for this I take for granted) wherewith a man can be intoxicated.*

* In shewing that absolute solitude is not an essential part, nor indeed any part of the Penitentiary System, I had forgot the original Penitentiary Act, 19 Geo. III. c. 74: under which act, solitude extends neither to "labour," nor "devotion," nor "meals," nor airings." See § 33.

§ 6. *DEAD PART.*

IT will be necessary on a variety of accounts to reserve some part of the circuit of the building for other purposes than that of being disposed of into Cells. A Chapel, a part of the establishment for which a place must be found somewhere, occupies upon the present plan a considerable portion of the Inspection-Tower. Even the whole of that circle, were there to be no Chapel, would not suffice for the lodgment of all the persons for whom lodgment would be necessary. There must be a Chaplain, a Surgeon, and a Matron: especially if besides male there should be female prisoners, which in a building of this kind there may be, as we shall see, without inconvenience.* Should the establishment not be of sufficient magnitude to call upon the Chaplain and the Surgeon for the whole of their time, and to give a compleat lodgment to those officers and their families, some sort of separate

* See the Section on the Separation of the Sexes.

apartment they must still have, the Surgeon at least, to occupy while they are there.

To such an establishment not only a Governor, but a Sub-Governor will probably be requisite : and for the sake of giving an inspecting eye to the approach without, as well as for other purposes, it will be necessary, as we shall see, that the former, and convenient, that the latter at least, should have an apartment fronting and looking out that way. And for the lodgment of the Governor at least, there will be required a space sufficient for a stile of living equal or approaching to that of a gentleman.*

* To a person of this description, or not much below it, must the provision made in point of room be suited, upon whatever plan the Governor is to find an inducement to take upon him the office. Upon the plan of payment by salary, a man who in point of education and responsibility had not some pretensions to be considered as upon that footing, would hardly be intrusted with a concern of such magnitude and importance. Upon the contract plan recommended in the Letters (See Letter 9th) a man who were not of sufficient responsibility and account to require provision to be made for him in the way of lodgment upon a similar footing, would hardly be accepted of. In the former case, the Governor would require a Master-manufacturer, or Task-master under him, to ease him of the most irksome and laborious part of the details, and occasionally of the whole, in case of sickness or necessary absence. And in the latter case, were a Master-manufacturer to be the contractor, while his own attention was principally

There must therefore be some part of the building, over and above the central, provided for the lodgment of these several sorts of Curators, and consequently not, like the rest, disposed of in the form of Cells. The part of the circuit thus sacrificed and blocked up, as we shall see, by a projecting-front, is what I call the *Dead-part*.*

To take from the Cells the whole of the space thus meant to be employed would absorb a greater part of the circuit than would be necessary, and thus make an uneconomical diminution in the number of prisoners capable of being provided for. To obviate this inconvenience, in a building of 120 foot diameter, which were the whole of it disposed into Cells would, by having 24 Double Cells in a story, and six such stories, contain 288 prisoners, I take, for supposition sake, for the Dead part, a space no more than equal to five such Cells.

cipally employed in turning the establishment to account in the way of profit, he would find it necessary to have under him a man of trust, in the character of Keeper, for the purpose of superintending the government of the prison; and paying a more particular attention than the occupations of the principal could admit of his paying to the great objects of safe-custody and good order.

* A wall, in contradistinction to erections with windows in them, is commonly called a *Dead Wall*.

To obtain what further room may be requisite, and that without any further prejudice to the number of the Cells, I add a quadrangular front, projecting, say for instance twenty foot, reckoning from a tangent to the circle. This, with the help of the space included by a perpendicular drawn from such tangent to the last of the Cells thus sacrificed on each side, would form a considerable projection, extending in front about 73 foot.* By this means the officers in question might all of them possess some sort of communication with the exterior approach, while the back part of the space has appropriated would give them communication with and inspection into the part allotted to the prisoners, and to such of them as required to be stationed in the heart of the building, access to their common lodgment in that place.

The front thus formed would not however require to be carried up to the utmost height of a building so lofty as the circular part, viz. upon

* This part cou'd not be delineated in the Draught Plate II. nor consequently the Dead Part distinguished from the rest. The disposition of these two parts must be governed in a considerable degree by local circumstances, and in its details is not essential to the composition of the building. The outline of it is however represented in Plate III,

the present plan about 68 foot, roof included. Prisoners, as their occasion to ascend and descend recurs, as we shall see, at very few and stated periods, may be lodged at almost any height without sensible inconvenience*: but this is not equally the case

* This would be, exclusive of the roof, 54 foot, being the aggregate height of the six Cells; the floor of the lowest story of Cells being supposed level with the ground: that is, even with the ground floor of the Projecting Front upon the same level. But it will probably be found convenient, as we shall see, to raise the ground floor of the Front to a level with that of the lowermost story of the Inspection-part, the floor of which must be $4\frac{1}{2}$ above that of the lowermost story of Cells; and to put under the Cells a sunk floor, running all round, which may be about $7\frac{1}{2}$ foot lower than that of the Cells, and consequently about 12 lower than that of the lowermost story of the Inspection-part. In that case, if the ground is at the same height before the Front as all round the Cells, there must be steps from it to the height of $4\frac{1}{2}$ foot (say 9 steps 6 inches each) to reach the ground floor: which will reduce to $49\frac{1}{2}$ foot the height from the ground floor of the ceiling of the highest story of Cells; and to $43\frac{1}{2}$ that from the same ground-floor to the windows of the same story of Cells: at which level the projection must terminate, in order to afford by its roof a terrace for the Infirmary, in manner here proposed.

This want of coincidence between the floors of the internal part and those of the external, in other words, between the Inspection-part and the Cellular, (a circumstance necessary to give each floor of the former the command of two floors of the latter) introduces a degree of intricacy which affects every conception that can be formed and every account that can be given of almost any part of this unexampled structure.

with members of families in a state of liberty. The cielings, though higher than those of the Cells, (which are 8 foot in the clear) would not require to be so lofty as the distance from floor to floor in the Inspection-part: a number of stories, though not so great as six, yet greater than three, might therefore be thus allotted. To dispose of the surplus to advantage, I omit a height at top equal to and level with that of the uppermost story of Cells. The corresponding part of the circuit of Cells, comprehending a space equal to that of five of these Double Cells, is thus restored to the light, and free to be converted into Cells.* This part, or any of the Cells composing it, may answer upon occasion the purpose of an *Infirmary*.

It possesses in this view a peculiar advantage. The front may have a flat roof, which being raised to the level of the floor or the bottom of the windows of this Infirmary part, and covered with lead or copper, will form a terras, on which convalescents, though incapable of the fatigue of descending and reascending, may take the air. A space of 73 foot in front, and in width where narrowest (viz. at its junction with the circle) 20 foot, and where

* It may possibly however be found eligible to sacrifice one of these Cells, viz. the center one, to let in light by a sky-light for the staircase for Chapel visitors. See § *Communications—Staircases*.

widest (viz. at the furthest part from the circle) near 32 foot, would afford very convenient room for this purpose, and the separation between the males and females might here likewise, if thought necessary, be kept up, by a partition wall cutting the terrace in the middle.

A more convenient Infirmary could scarce be wished for. The only expence attending it is the difference between that of a flat and that of an ordinary roof for the quadrangular projection over which it looks: and even this difference is not an essential one. On the ordinary plans, while there are no sick, the Infirmary is vacant and useless. Such need not be the case here. Guarded and watched in the same manner, the Infirmary Cells are as fit for the reception of prisoners in health as any other Cells. When the establishment is in this state of repletion, suppose an Infirmary Cell wanted for a sick person, it is but dismissing its former inhabitant or inhabitants to an ordinary Cell or Cells upon the principle already mentioned.

The part thus denominated the Dead part would be very far from lost. It would afford room for many necessary articles in the composition of the building. Out of it ought to be taken :

PART I.

E

I. Staircases

1. Staircases for the Prisoners and Inspectors: for which see the head of Communications.

2. Entrance and Staircases for the Chapel Visitors: for which also see the head of Communications.

3. Passage and Staircase to the Inspector's Lodge: for which see the same title.

4. Vestry for the Chaplain.

5. Organ and Organ loft.

6. Clock-house and Belfry.

§ 7. *CHAPEL.*

Chapel Introduced.*

THE necessity of a Chapel to a Penitentiary House is a point rather to be assumed than argued. Under an established Church of any persuasion, a system of penitence without the means of regular devotion would be a downright solecism. If religious instruction and exercise be not necessary to the worst and generally the most ignorant of sinners, to whom else can they be other than superfluous?

This instruction, where then shall they be placed to receive it? No where better than where they are. There they are in a state of continued safe-custody: and there they are without any additional expence. It remains only to place the Chaplain: and where

* The Chapel, not being a characteristic part of the design, will be sufficiently understood from the Draught, without any particular explanation. For the whole detail of this part, I am indebted to my professional adviser, Mr. Revely, of Great Titchfield street, Marybone, whose beautiful and correct drawings of Views in the Levant have been so much admired by the dilettante in Grecian and Egyptian antiquities.

the Chaplain is, there is the Chapel. A speaker cannot be distinctly heard more than a very few feet behind the spot he speaks from.* The congregation being placed in a circle, the situation therefore of the Chaplain should be, not in the center of that circle, but as near as may be to that part which is behind him, and consequently at the greatest distance from that part of it to which he turns his face.

But between the center of the Inspection Tower all round and the intermediate Well, there must be at any rate, whatever use it may be put to, a very considerable space. What then shall be done with it? It cannot be employed as a warehouse consistently with the sanctity of its destination: nor even independently of that consideration: since if thus filled up it would intercept both sight and voice. Even if Divine service were out of the question, it is only towards the center that this part could be employed for stowage, without obstructing inspection as much as in the other case it would devotion: nor can it even in that part be so employed, without narrowing in proportion the In-

* I found this by experiments made on purpose in churches. See also Saunders on Theatres.

spector's range; and protruding his walk to a longer and longer circuit. What then, shall we do with this vacuity?—Fill it with company, if company can be induced to come. Why not, as well as to the Asylum, the Magdalen and the Lock Hospital, in London? The scene would be more picturesque: the occasion not less interesting and affecting. The prospect of contributions that might be collected here as there, will bind the manager to the observance of every rule that can contribute to keep the establishment in a state of exemplary neatness and cleanliness, while the profit of them will pay him for the expence and trouble. Building, furniture apparel, persons, every thing must be kept as nice as a Dutch House. The smallest degree of ill scent would be fatal to this part of his enterprize. To give it success, prejudices indeed would be to be surmounted: but by experience, continued and uninterrupted experience, even prejudice may be overcome.

The affluence of visitors, while it secured cleanliness, and its concomitants healthiness and good order, would keep up a system of gratuitous inspection, capable of itself of awing the keeper into good conduct, even if he were not paid for it: and the opposite impulses of hope and fear would

thus contribute to ensure perfection to the management, and keep the conduct of the manager wound up to the highest pitch of duty. Add to this the benefit of the example, and of the comments that would be made on it by learned and religious lips : These feeds of virtue instead of being buried in obscurity, as in other improved prisons, would thus be diffeminated far and wide.

Whatever profit, if any, the contractor could make out of this part of the plan, why grudge it him? Why to his establishment more than to any of those just mentioned? Not a penny of it but would be a bounty upon good management and a security against abuse.

If the furniture and decoration of the Chapel would require some expence, though very little decoration would be requisite, a saving on the other hand results from the degree of openness which such a destination suggested and rendered necessary. On the original plan, the whole circuit of the central part, then appropriated solely to inspection, was to have been filled with glass: on the present plan, which lays this part open in different places to the amount of at least half its height, that expensive material is proportionably saved.

On

On the present plan, it will be observed, that three stories of Cells only, viz. the second, third, and fifth from the top, enjoy an uninterrupted view of the Minister.* That the inhabitants of the other stories of Cells may have participation of the same benefit, it will be necessary they should be introduced, for the occasion, into or in front of such of the Cells as are in a situation to enjoy it. This might be effected, and that with the greatest care, were the whole establishment to receive even a *double complement*.

The two parties composed of the fixed inhabitants of each Cell, on the one hand, and the strangers imported from a distant Cell on the other, might be stationed either in one continued row in the front of the Cell-galleries, or the one party in that line and the other immediately within the Cell-grating. In neither case need the law of seclusion be suffered to be infringed by converse: both parties are alike awed to silence by an invisible eye, invisible not only to the prisoners in front, but to the company behind: not only the person of

* In some impressions of the Draught the minister's station, and consequently the views and want of views that result from it are not represented: but they will readily be conceived.

each Inspector, but his very station being perfectly concealed from every station in the Chapel.*

* All this may be very well, said an intelligent friend, in the way of *example*:——but how stands it upon the footing of *reformation*? Might it not have ultimately a corruptive effect upon the persons thus exhibited, shaming them indeed and distressing them at first, but by degrees hardening them, and at length rendering them insensible? Would it not, in short, to this purpose be a sort of perpetual pillory?

To this I answer—

1. That of the two, example and reformation, example is the greatest object: and that in the proportion of the number of the yet innocent to that of the convicted guilty.

2. That the offences for which persons are subjected to this punishment are deemed of a deeper die, and as such to require a punishment more severe than that even of those who are consigned to the pillory.

3. That at their trials there is not one of them but must have been exhibited in a manner equally public, and in circumstances reflecting a much greater measure of humiliation and shame: with this difference too, that on that occasion each person is exhibited singly, and the eyes of the whole audience are fixed upon him alone:—that he is to speak as well as to hear, and stands forth in effect the sole hero of the melancholy drama: whereas, on an exhibition like that here proposed, the attention of the spectators, being divided among so many, scarcely attaches individually upon any one. Besides that upon his trial a man is held forth to view with the marks of guilt fresh upon his head: whereas at the remote period in question he does not appear till a progress more or less considerable may be presumed to have been made

made in the career of penitence, and the idea of guilt has been covered by expiation.

Should these answers be thought to have disproved the mischief, nothing can be simpler than the remedy. A mask affords it at once. Guilt will thus be pilloried in the abstract, without the exposure of the guilty. With regard to the sufferer, the sting of shame will be sheathed, and with regard to the spectators, the salutary impression instead of being weakened will be heightened, by this imagery. The scene of direction will be decorated by—why mince the word?—by a masquerade: a masquerade indeed, but of what kind? not a gay and dangerous, but a serious, affecting, and instructive one. A Spanish *pato-da-je* has still more in it of the theatre:—and what is the objection there?—That the spectacle is light or ludicrous?—No: but rather that it is too serious and too horrible.

This it is to be noted is the only occasion on which their eyes will have to encounter the public eye. At all other times, be their visitors ever so numerous, there will be no consciousness of being seen, consequently no ground for the insensibility which might be apprehended from the habit of such consciousness.

Where there is patience to discriminate, the worst institutions may afford a hint that may be of use. I would not turn my back upon reason and utility, though I found them in the Star-Chamber or the Inquisition. The authors of the latter institution, in particular, whatever enormities and absurdities may be laid to their charge, must at least be allowed to have had some knowledge of *stage-effect*. Unjust as was their penal system in its application and barbarous in its degree, the skill they displayed in making the most of it in point of impression, their solemn processions, their emblematic dresses, their terrific scenery, deserve rather to be admired and imitated than condemned.

Nil ex scenâ, says Lord Bacon, speaking of procedure in the
civil

civil branch of the law: *Multum ex scenâ*, I will venture to say, speaking of the penal. The disagreement is but verbal: *Scena* in the language of the noble philosopher, means *lying*: in mine, *scena* is but *scenery*. To say *Multum ex scenâ*, is to say lose no occasion of speaking to the eye. In a well composed Committee of Penal Law, I know not a more essential personage than the Manager of a Theatre.

§ 8. *INSPECTION-GALLERIES*

AND

LODGE.

IN the three stories of the Inspection-Tower, Annular Inspection-Galleries, low and narrow, surrounding in the lowermost story a circular Inspection-Lodge; instead of three stories of Inspection-Lodge, all circular, and in height filling up the whole space all the way up.*

* It is to the ingenuity of Mr. Revely that I am indebted for this very capital improvement, which I did not submit to without reluctance. It occurred to him in contriving the construction of the Chapel, in the room of some crude ideas of my own, a detailed description of which would take up more room than it would be worth. The floors of the present Inspector's-Galleries were to have been continued inwards as far as what constitutes now the area of the Chapel. The Governor and his subordinates were to have lived in them on week days, and on Sundays these floors were to have answered the purpose of galleries to the Chapel. All the way up from floor to floor there were to have been windows, which were to have been got rid of some how or other during the time of Divine service.

Two

Two desiderata had been aimed at in the contrivance of the Inspector's stations: 1. The unbounded faculty of seeing without being seen, and that as well while moving to and fro as while sitting or standing still: 2. The capacity of receiving in the same place visitors who should be in the same predicament.

The second of these objects is not to be dispensed with. If the Governor or Sub-Governor cannot for the purposes of his business, receive company while he remains in this station, he must as often as he receives them quit not only the central part, but the whole circle altogether: leaving his place in the Inspection-part to be supplied by somebody on purpose. Hence on the one hand a relaxation of the inspective force: on the other, an increase in the expence of management.

Suppose it possible, as I conceive it will be found, for the Inspector's invisibility to be preserved, upon condition of giving up that of the visitors, would the former advantage be sufficient without the latter?—Not absolutely: for confederates, as the discrimination could not well be made, might gain entrance in numbers at a time, and while one was occupying the attention of the Inspector, others might by signs concert enterprizes of mischief or escape

escape with the prisoners in their Cells. Such at least might be the apprehension entertained by some people: at least upon the face of this single supposition: though to one whose conception should have embraced the whole system of safeguard and defence, the danger would I think hardly appear formidable enough to warrant the incurring any expence or sacrificing any advantage.

Upon the first crude conception, as stated in the Letters, my hope had been, that by the help of blinds and screens, the faculty of invisible inspection might have been enjoyed in perfection by the whole number of persons occupying the central part, wherever they were placed in it, and whether in motion or at rest. I am now assured, and I fear with truth, that these expectations were in some respects too sanguine. I mean as to what concerns ideal and absolute perfection: at the same time that for real service, their completion, I trust, will not be found to have sustained any material abatement.

Were I to persist in endeavouring to give this property of invisibility with regard to the Cells as well to the person of the Inspector as to every part of the large circle in which place him, and to every object in it, his situation would stand exposed, I am
assured

assured, to this dilemma : if he has light enough to do any business, he will be seen, whatever I can do, from the Cells : if there is not light enough there for him to be seen from the Cells, there will not be light enough to enable him to do his business.

The difficulty would not be removed, even tho' the Chapel part in the center were thrown out, and the Inspector's apartment extended so as to swallow up that central part, and occupy the whole circle. My expedient of diametrical screens, or partitions crossing each other at right angles, would not answer the purpose :* if they extended all the way from the circumference to the center, leaving no vacuity at that part, they would divide the whole circle into separate quadrants : a man could be in but one of these quadrants at a time, and while he was in that one he could see nothing of the Cells corresponding to the others. Stationed exactly in the center, he would see indeed, but he could at the same time be seen from, all the Cells at once. No space can ever be so exactly closed as to exclude the light, by any living figure.

Supposing the apertures I had contrived in the screens instead of doors capable of answering the purpose, they would leave to the Lodge so provided

* See Letter II.

but little if any advantage over an annular Gallery at the extremity of the circle, as contrived by Mr. Revely. The circuit might be performed nearer the center, but still to carry on the process of inspection a circuit must be performed. Nor could it be performed in an exact circle: the smaller circle thus meant to be performed, would be broken in upon and lengthened in four places by zigzags, which would retard a man's progress more than an equal length of circle, and might upon the whole consume a portion of time little less than what would be requisite for performing the perambulation in Mr. Revely's Inspection-Galleries.*

* The truth is, what one would hardly have supposed, that for performing this perambulation, a walk of about 46 foot and back again in a straight line is pretty well sufficient. Station the Inspector any where with his eye contiguous to the outer circumference of his ring, he can, without quitting the spot he stands or sits on, command a view of seven Cells on each side. In the same ring 46 foot may be described in walking without deviating from the right line: and 46 foot is the length of the chord subtending the space occupied in the circumference by 5 Cells. A walk then, in a line equal and opposite to the chord subtending the part of the Gallery that corresponds to the Dead Part, will give an Inspector in his Gallery a view of the whole circuit. If, as in case of the admission of female prisoners, the circuit be divided in any story between a male and female Inspector, the part allotted to each may, it is evident, be commanded without any change

Add to this, that the darkness thus spread over the station of the Inspector, would not admitt of any cure. A candle could not be made to illuminate any object he had occasion to see, without throwing out rays that would render him more or less visible, and his situation and occupation more or less apparent, from the Cells. If a screen concentric to the circumference of the room were any where interposed, and light admitted within side of it by a sky-light or void space over the center of the building, that would increase the length of the zig-zag circuit to be performed through the diametrical screens, still more : if there were no such concentric screens, the thorough light would be completely let in, rendering the Inspector and every other object in the room compleatly visible from all the Cells.

change of place. The views thus obtained are not, it must be confessed, compleat ones : more or less of every Cell but two being all along intercepted by the Partition-walls. But it is chance only, and not design, that can withdraw a prisoner in any part of the circuit out of the Inspector's view : never knowing in what part of the Gallery the Inspector is at the time, no one part of any Cell can promise him any better chance of concealment than another.

The calculation, it is to be observed, is taken from the real design : were the measurement to be performed upon the engraving, the result, owing to the error already mentioned, would be still more favourable.

Happily

Happily this union of incompatible conditions, however requisite to fill up the measure of ideal perfection, is far from being so with regard to practical use. In the narrow annular Gallery, as contrived by Mr. Revely, the condition of invisibility may be preserved, I am assured, in full perfection. By being painted black in the inside that station may be rendered by the help of blinds, as I had proposed, compleatly dark, its narrowness rendering it impermeable to the thorough light.

To change his prospect, the Inspector must, it is true, be obliged to shift his station. He must therefore from time to time patrole and go his round in the manner of a centinel or a watchman: and this must form a considerable part of the employment. It need not however occupy any thing near the whole.* Stationed at no more than 28 or 29 foot from the exterior windows, and close to the space illuminated by the ample skylight over the Annular Well, he would have light enough to read or write by: and these employments, by the help of a portable stool and desk, he might carry on at times at any part of the cir-

* The greatest distance from one part of his range to the other would be 93 foot, being half the length of the circumference of the circle at that part.

cle. Books may be kept, entries made, as well in a room of an annular figure, as in a round or square one.

Nor will the time employed in perambulation be thrown away, or expended upon the single purpose of keeping order among the prisoners. Had he, instead of this ring, had the whole circle to range in, he would have had frequent occasion thus to travel in the circumference, were it only to give occasional orders and instructions to the prisoners as they sit at work in their Cells, as well as to let them in and out in manner already mentioned.*

* See § 3, *Annular Well*, and Part II. § *Airing*.

Your occasional vigilance will not do, says an objector: Your prisoner will make experiments upon it, discover when Argus nods, and make his advantage of the discovery. He will bazard a venial transgression at a venture: that unnoticed, he will go on to more material ones—Will he? I will soon put an end to his experiments: or rather, to be beforehand with him, I will take care he shall not think of making any. I will single out one of the most untoward of the prisoners. I will keep an unintermitted watch upon him. I will watch until I observe a transgression. I will minute it down. I will wait for another: I will note that down too. I will lie by for a whole day: he shall do as he pleases that day, so long as he does not venture at something too serious to be endured. The next day I produce the list to him.—You thought yourself undiscovered: you abused my indulgence: see how you were mistaken. Another time you may have rope for two days, ten days: the longer it is, the heavier it will fall upon you. Learn from

One expedient there remains by which, if it be worth while, the invisibility of the Inspector may be preserved to him, without the obligation of ever stirring from his seat. This however is subject to two restrictions: one is, that whenever he quits a particular spot in the room to pass to any other part of the same room he must become visible: the other is that his invisibility is not shared by any other person in the room. The expedient is to place the Inspector in a kind of lantern, shaped somewhat like two short necked funnels joined together at their necks.

Placed as before on a floor situated midway between the floor and the ceiling of the lowermost of the two stories he commands, his light comes to him from a spot elevated above the eye of a person standing in the uppermost of those stories: consequently in all cases above the eye of any person dwelling in that upper story. Level with his eye whether sitting or standing, the lantern narrows to such a degree as to enable him to carry his eye, close to the circumference all round, without changing the spot he sits or stands on.

from this, all of you, that in this house transgression never can be safe. Will the policy be cruel? — No; it will be kind: it will prevent transgressing: it will save punishing.

To give him his view, the lantern is pierced at both elevations with small holes, corresponding, as upon trial shall be found most convenient, each of them to one or two or some greater number of the Cells. These holes are no larger than the aperture of a common spying glass, and like that closed by a piece of glass, which if necessary might be coloured, or smoked, or darkened by a blind. Grant that after all they will not perfectly exclude the thorough light, nor prevent his figure from being to a certain degree visible from the Cells. Still however the part of his figure thus betrayed will be so small, that to the purpose of discovering to a prisoner in his Cell whether the eye of the Inspector is at that moment directed towards him or us, it will be same thing as if he were invisible. That, by diminishing the apertures to a certain degree, the effect might be compassed, is indubitable: for the lantern might be of the thinness of paper; in short it might in that part be of paper and then a pin-hole would be sufficient to give him a view. Any opaque object to let down by a line and pulley on his going out would prevent his absence from being discernible. The difference between a body of that magnitude constantly at rest and one occasionally

sionally in motion would be marked by the smallness of the apertures.

At the altitude reaching between the height of his eye when sitting, and the height of his eye when standing, the lantern could not be too narrow: it should be only just wide enough to admit his head and shoulders with ease. Above and below that height the wider the better, for the sake of air and room, so as it did not swell out in such manner as to intercept his view.

The next question is, how to prevent the prisoners from seeing when it is he quits his station? His exit and return if performed by a door in the side, would be visible from all or almost all the Cells: his lantern not serving him in the capacity of a screen on such occasions to any degree worth mentioning. To prevent such discovery, his entrance must be, not at an ordinary door on the side, but at a trap-door by a ladder from below. The lantern might however besides that be furnished with a door at the side, to give him passage at times when the concealment of his situation was no longer material, and when he saw occasion to shew himself for any purpose to the inhabitants of any particular Cell: for instance to give a prisoner pas-

sage to or from his Cell for the purpose and in the manner already mentioned.

The central aperture, large as it is would be no bar to the employing of this contrivance. The lantern, it is true could not occupy this central part: it must be placed somewhere on one side of it, in some part of some surrounding ring. The Inspector therefore, while stationed in this lantern, would not have a view equally near of all his Cells: but of all he would have some view, and that, one may venture to say, a sufficient one: the difference would only be the distance from the center of the lantern to the center of the building: say from ten to a dozen foot. The part too from which he was in this manner farthest removed might be the Dead part where there are no Cells: a division which upon the present plan, occupies five parts in twenty-four of the whole circuit.

Still however an apartment thus circumstanced would not serve perfectly well for visitors: for they at any rate would be visible to the prisoners: which for the reasons already mentioned, it were better they should not be. Here then comes in one use of the Inspector's Lodge, a room situated within

within the Inspection-Gallery, and encircled by it all round. Many other uses, and those very material, will be observed in it when the construction has been described: uses, to which, it will be equally manifest that a transparent room, fitted up with an inspection lantern, would not be applicable with advantage.

The Inspector's Lodge is a circular or rather annular apartment immediately underneath the Chapel. The diameter I propose now to give it is 54 foot including the aperture in the center.*

The central aperture in this story is of the same diameter as in the area of the Chapel, and the dome that crowns it, viz. 12 foot: it serves here to light the center of the *diametrical passage*, of which under the head of *Communications*. This aperture is likewise of farther use in the way of safeguard: for which also see the head of *Communications*.

* In some of the impressions of the Draught it appears but 42 foot: difference 12 foot. But of this six foot is taken away from this part by an error in the Draught as already mentioned: the other six foot, by the three foot added to the depth of the Inspection Gallery in this story: an addition which I have determined to take away: it has no specific use; and it would throw the Lodge so far back as to be precluded by the bottom of the middlemost Inspection Gallery from the possibility of having any view at all of the uppermost story of Cells.

As the central aperture in the floor of the Lodge gives light to the passage in the story underneath, so does the correspondent aperture in the area of the Chapel give light to the Lodge.

Of these central apertures that which is in the floor of the Chapel takes nothing of the room from visitors. During Chapel times it is closed: the state of darkness to which it thereby reduces the Lodge is then of no consequence, since at those times nobody is there. So likewise in a cold winter's evening, when day-light gives place to candle-light, the faculty of closing this aperture will probably be found to have its convenience. Its height, at the circumference, is that of the Inspection-Gallery, about 7 foot: at the central aperture about $13\frac{1}{2}$ foot*: within that aperture, about 61 foot: that being the depth below the sky-light by which the central apertures are crowned. The ceiling is consequently a sloping one: dropping in the course of 18 foot about $6\frac{1}{2}$ foot: viz. from $13\frac{1}{2}$ to 7.

* The Draught does not give quite so much. The higher the better, so long as it does not raise the floor of the Chapel so much as that the heads of the Chapel visitors, when standing, shall conceal the Minister from the prisoners when kneeling in the second story of Cells.

All round the circuit, the Dead part excepted, runs a narrow zone of window, to open to the Lodge an occasional view of the Cells. Of these the two lower stories may be seen through the lowermost Inspection-Gallery: the others without any intermedium.

The ways in which this view might be opened are more than one: the simplest is to put two rows of panes: one for giving a view of the two lowermost stories of Cells, a little below the highest part of the upright partition: the other for the four remaining stories, in the chord subtending the angle made by the junction of that partition with the cieling. To these may be adapted blinds of coarse white muslin or linnen, pierced every inch or two with eyelet holes about the size of an ordinary silver spangle. By this means matters may unquestionably be ordered in some way or other, so that no view at all shall be obtainable in the Cells of any thing that passes in the Lodge: at the same time that a person in the Lodge may, by applying his eye close to any of the holes, obtain a perfectly distinct view of the corresponding Cells.

By the central aperture, were that all, a moderately good light, it is supposed, would be afforded to the Lodge: and this light cannot but receive some
addition

74 § 8. *Inspection-Galleries and Lodge.*

addition from the luminous zone thus given to the circumference.*

To gain the height at which the business of inspection can in this manner be occasionally performed from the Lodge, an ascent of about 1 or $\frac{1}{2}$ to 2 foot must be made: this may be done by a circular bench of about 2 foot wide, attached all round to the Partition-wall. It may be distinguished by the name of the *Inspection-platform* or *Inspection-bench*.

By means of the lower part of this zone the Inspector of the Gallery attached may himself be inspected by his superiors from the Lodge: reciprocity will be prevented by the advantage in height given to the commanding station. He may also be relieved at any time: and whenever the windows of the Gallery are thrown open for air, the Lodge succeeds, in a manner of course, to its inspection-powers: the view brightening of itself at the time when a view particularly clear is more particularly wanted. So likewise when the In-

* The Pantheon at Rome, which is more than twice the height of the space between the floor of the Lodge and the opening sky-light over the aperture, is lighted, and according to Mr. Revely's observation, very well lighted, by an aperture of about twice the diameter of the one here proposed.

Inspector in the Gallery is obliged to shew himself at any particular spot, for instance by opening the door of one of the Cells, losing thereby his omnipresence for the time.*

The Lodge is the heart, which gives life and motion to this artificial body: hence issue all *orders*: here center all *reports*.

The conversation-tubes, spoken of in the Letters, will on this occasion be recollected: here they will find employment in more shapes than one.

One set is for holding converse with the subordinate Inspectors in the two superior Galleries. A small tube of tin or copper† passes from the Lodge,

* In a Panopticon which had eight stories of Cells, it might perhaps be not amiss to make the experiment of the Lantern. It might be performed on a floor between the Lodge and the Chapel: the ladder or small staircase to it, like that of a pulpit, ascending through the ceiling of the Lodge. It might be tried at a small expence: and in case of its not answering, it would be easy to give to this story the form of the other. Possibly in different ways both arrangements might have their use.

But the sorts of Panopticons to which the contrivance of the Lantern is more particularly adapted, are those in which seclusion from society would be out of the question, such as Houses of Industry, free Manufactories, or Schools.

† About the size of a *pea-shooter*, a play-thing used by children for blowing peas will probably be sufficient.

in an horizontal direction, to one of the supports of the lowermost Inspection-Gallery running immediately underneath the roof, to which it is attached by rings. Here, bending to a right angle, it runs up along the support till it reaches that one of the two superior Galleries for which it is designed: it there terminates in a mouth-piece level with the ear or mouth if a person sitting there. A similar mouth-piece is fitted to it at its commencement in the Lodge.

A tube of this sort for each Gallery may be attached to every one, or every other one, of the 19 Gallery-supports corresponding to the number of the Cells.

The tubes belonging to the different stories should be attached together in pairs, with their respective mouth-pieces in the Lodge contiguous: that a superior in that apartment may have it in his power to hold converse with the subordinates of the two different Galleries at the same time, without being under the necessity of vibrating all the while from place to place.

Whether the voice alone will be sufficient, or whether a bell will be necessary, to summon a subordinate Inspector from the most distant part of his Gallery to the station corresponding to that chosen
by

by the superior in the Lodge, may perhaps not be capable of being decided to a certainty without experiment. If a bell be necessary it may be convenient to have one for every tube: and the wire by running in the tube as in a sheath will be preserved from accidents.*

* The power possessed by metallic tubes of conveying the slightest whispers to an almost indefinite distance, can be no secret to such readers as have seen any of the exhibitions of Speaking Figures, whose properties depend upon this principle.

Many a reader may also have seen Mr. Merlin's ingenious contrivance of written tablets of orders, for masters above to servants below, an index pointing to a tablet in the superior room, giving motion to an index pointing to a duplicate tablet in the inferior room, upon the principle of the drawing machine called a *pantograph*. The conversation-tubes abovementioned might perhaps supply the place of those order-tablets, and if at all, with very considerable advantage. The intercourse by the tablets is *limited* to the few orders they can be made to hold: it is not reciprocal: the apparatus, from what I recollect of Mr. Merlin's price, would I should suppose be more expensive.

For such purposes the tube alone without a bell would answer the purpose, supposing the servant to be in the room into which it opened, and not unwilling to receive the order: but for summoning him from a distant part of the house, and for putting a negative upon all pretence of not hearing, nothing it is evident but a bell can serve.

The tube, as already mentioned, might serve as a sheath to enclose the bell: thus the expence of the sheaths, which are at present employed in some cases, would be saved. At the
places

78 § 3. *Inspection-Galleries and Lodge.*

The other set of conversation-tubes is to enable an Inspector in the Lodge to hold converse in his

places where cranks are necessary, the tubes, that the continuity may not be broken, must be enlarged to receive them. Whether the voice would continue intelligible, as well as audible, after so many inflexions of the tube as may be necessary in some cases in common houses, is more than without experiment I can pretend to say. In the present case there is but one angle, and even that, in case of necessity, might be got rid of.

Wire, by its rigidity being liable to twist and snap, perhaps the flax of New South Wales, when that admirable commodity comes to be supplied in sufficient quantities for manufacture, might be substituted with advantage.

Under the different mouth-pieces opening into the servants' apartment, might be painted the names of the rooms to which they respectively corresponded.

Copper, by those who would not grudge the expence, would on several accounts be evidently preferable to tin. In the master's apartment, gilt mouth-pieces would form an ornamental addition to the furniture.

It is certainly an awkward circumstance, and which occasions much waste of time in families, for a servant to be obliged to go up three or four pair of stairs to receive orders which are to be executed in the kitchen from whence he came.

Since writing the above, I recollect the having seen a tube employed for this purpose many years ago at Messrs. Nairne and Blunt's, Mathematical Instrument-makers, in Cornhill, to great advantage. It reaches from the bottom of the staircase to a level with a workshop in the garret.

At Mr. Merlin's too I recollect having heard of an instance in which the principle is employed in a piece of mechanism set up
since

own person, whenever he thinks proper, with a prisoner in any of the Cells. Fixed tubes, crossing the Annular-Well and continued to so great a length being plainly out of the question, the tubes, for this purpose can be no other than the short ones in common use under the name of *speaking-trumpets*. To an Inspector stationed in the Lodge it is not indeed in every part of every Cell that a prisoner with whom he may have occasion to hold converse will be already visible. But to render him so there needs but an order summoning him to the grating: which order may be delivered to him through the local subordinate from the Inspection-Gallery belonging to that story of Cells.

Here may be observed the first opening of that scene of clock-work regularity which it would be so easy to establish in so compact a microcosm.

since I was there. Discourse is carried on in whispers between two persons addressing themselves to two heads set up at the opposite ends of a long room. There must therefore be two angles made; two perpendicular tubes inserted into an horizontal one.

It is curious to think what a length of time an idea may lie, without receiving some of its most obvious as well as useful applications. For how many centuries was the art of engraving for impressions practised to inimitable perfection on small stones, without its occurring to any one to app'y it to plates or types upon a large scale?

Certainly,

Certainty, promptitude, and uniformity are qualities that may here be displayed in the extreme. Action scarcely follows thought, quicker than execution might here be made to follow upon command.

Turn now to the good Howard's Penitentiary-Town, and conceive a dozen Task-masters and Turnkeys running on every occasion from one corner of it to the other and back again (little less than $\frac{1}{4}$ of a mile) to receive some order from the Governor, the prisoners their own masters all the while.

Hither come the customers to such prisoners as exercise their original trades: at stated times, to bring materials and take back work: and at most times to give orders. By the conversation-tubes, converse for this as well as every other permitted purpose, is circulated instantaneously with the utmost facility to the greatest distance. Even the intervention of the local Inspector is not necessary. A call from a speaking trumpet brings the remotest prisoner to the front of his Cell, where he may be seen by the customer as well as heard. Under each speaking-trumpet hangs a list of the Prisoners to whose Cells it corresponds. The names are on separate cards, which are shifted as often as a prisoner

soner,

soner happens to be shifted from Cell to Cell. As to the two lowest stories of Cells, converse with them may be carried on directly from the corresponding Inspection-Gallery.

The Lodge may serve as a Common-Room for all the officers of the house. Of its division into male and female sides I speak elsewhere. On the male side the Sub-Governor, the Chaplain, the Surgeon, and perhaps another officer such as the head School-master, may have each his separate apartment, divided however from the rest no otherwise than by a moveable screen, not reaching to the ceiling, and leaving free passage as well round the central aperture as round the Inspection-Platform attached to the surrounding wall.

In this same apartment the officers, male and female, may make their meals in common. Room is not wanting. Why not, as well as fellows in a College? This surely would not be the least active nor least useful of all Colleges. Too much of their time cannot be spent in this central station, when not wanted on immediate duty. No expedient that can help to bring them hither, or keep them here, ought to be neglected. The legitimate authority of the Governor and Sub-Governor will here receive assistance, their arbitrary power re-

straint, from the presence of their associates in office. A Governor, a Sub-Governor, will blush if not fear, to issue any tyrannical order in presence of so many disapproving witnesses: whose opinion, tacit or expressed, will be a bridle upon his management, though without power to oppose and disturb it. Monarchy with publicity and responsibility for its only checks, such is the best, or rather the only tolerable form of government for such an empire.

In Mr. Howard's Penitentiary Town, each Officer has his house, all separate, and all out of sight and hearing of the prisoners. This latter arrangement may be the more agreeable one of the two to the servant, but which is the best adapted to the service?

The want of side windows as in other rooms will render it eligible at least, if not necessary, to make a provision of *air-holes* for the purpose of ventilation.

The supports to the surrounding Gallery, as shewn in the engraved plan, might, if made hollow answer this intention, and save the making an apparatus of tubes on purpose. In this case however each support would require an horizontal tube inserted into it at right angles, which might run
close

close and parallel to the conversation-tubes, immediately under the ceiling.

It is at the level of the ceiling that these air-tubes should discharge themselves into the Lodge, and not at the level of the floor. In the latter case they could not answer this intention without a continual blast, which in cold weather would be very troublesome. In the other way the blast beginning above the level of the head, is directed upwards and gives no annoyance. Health is not bought at the expence of comfort.

In giving the slope to the ceiling in manner above-mentioned, I had two conveniences in view: ventilation and stowage. To ventilation, which is the principal object, a rectilinear slope in this case is more favourable not only than a horizontal ceiling, but even than a coved ceiling or dome. Both would have left a space untraversed by the current: in the one case the space would have been angular: in the other there would still have remained some space for stagnant air, though lessened by the abrasion of the angle.

The reduction of the height of the ceiling at this part leaves a quantity of room, of which some use may be made in the way of *stowage*. From the area of the Chapel the floor must, as well as the

ceiling below, have a certain degree of slope to afford the second story of Cells a view of the Minister. But the declivity in the ceiling begins, not under the *circumference* of that area, but much nearer the center, viz. at the central aperture. Hence, after necessary allowance for thickness of floor and ceiling, there will remain a void space of considerable extent all round, the exact dimensions of which it is needless to particularise: Disposing the slope here and there in regular and gentle flights of steps for the purpose of communication, in other places the thickness of 2 or 3 or 4 steps may be laid together to receive drawers or presses.

A place still more convenient in proportion to the extent of it, in the way of stowage, will be the space immediately underneath the Inspector's platform in the Lodge. It will serve for presses or drawers opening into the surrounding Gallery.

A more considerable space runs from behind the two superior Galleries, under the steps of the Chapel-Galleries to which they are respectively attached. Tools and materials of work of which the bulk is not very considerable will find very convenient receptacles in these several places, where they will be in readiness to be delivered out and received back

back by being handed over the Annular Well, to the prisoners in their Cells.

As to the mode of *warming* the Lodge it will be considered in the Section so entitled.*

* How to reconcile the use of the Lodge as a Dining room with the purity of air necessary to the reception of company in the Chapel? By making the Saturday's dinner the last meal, dedicating to ventilation the whole interval between that period and the commencement of Divine service in the ensuing day.

§ 9. OF THE

COMMUNICATIONS IN GENERAL.

UNDER the general name of *Communications* may be comprised,

1. The Passages, and Galleries serving only as passages.
2. Staircases.
3. Gates, Doors, and apertures answering the purpose of doors.

None of these but are articles of very material concern in a prison.

In a Panopticon prison one general problem applies to all: to extend to all of them, without exception or relaxation, the influence of the commanding principle. Cells, Communications, Outlets, Approaches, there ought not any where be a single foot square, on which man or boy shall be able to plant himself, no not for a moment, under any assurance of not being observed. Leave but a single spot thus unguarded, that spot will be sure to

to be a lurking place for the most reprobate of the prisoners, and the scene of all sorts of forbidden practices.

In an ordinary public building there is an use in having the Communications spacious and numerous. In a prison they ought rather to be few and narrow. Convenience is the great object in the one case, security in the other. The fewer the easier guarded: the narrower, the less force there can be at any given point to oppose to the commanding and defensive force of the prison. Nor will the sacrifice requisite to be made of convenience be found so great as might be imagined. In an ordinary public building, persons have occasion to pass in indeterminate numbers at a time, and the same person frequently. In a well-contrived and well-regulated prison, at least in a prison upon this construction, the persons who are to pass, and the times at which they have occasion to pass are all foreknown and registered.—Sacrifice did I say? The reader has already seen much convenience gained, and I hope he will see scarce any sacrificed.

The objects that required to be attended to in planning a system of Communications for an establishment of this kind were, 1. The *ends* to be kept in view in the contrivance. 2. The places to and

from which Communications were to be contrived: the persons and things *for* which the Communications might be wanted.

The *ends* to be kept in view with regard to the prisoners are principally four.

1. Uninterrupted exposure to invisable inspection.

2. Inability to attack the keeper or do other mischief.

3. Separation of the sexes, if both are included in one building.

4. Prevention of converse with prisoners of other Cells, at times of passing to and fro.

The *places* in question are, 1. The Cells. 2. The Inspection Galleries. 3. The Inspector's Lodge. 4. The Chapel. 5. The Ware-rooms. 6. The Fire-places. 7. The Yards.

The *persons* in question are, 1. The Prisoners. 2. The Keepers. 3. Visitors to the Head-keeper and other officers, on business or curiosity. 4. Visitors to the Chapel.

The *things* in question may be reduced to the head of, 1. Machines. 2. Materials for work. 3. Finished work. 4. Provisions.

COMMUN.

§ 10. *COMMUNICATIONS—*

PRISONERS' STAIR-CASES.

STAIRCASES for the Prisoners are of course requisite from the bottom to the top of that part of the building which they are to inhabit: from the sunk story below the Cells to the upper story of the Cells.

I make two sets of Staircases and but two—I put them into the Dead-part—I place them in stories one over another, and not, as was once proposed to me, winding all over the building—I place them in a line within the inner boundary or back front of the Cells, yet not extending so far the other way, as to the exterior boundary or fore front—I make them of iron bars—I make the flight of steps run in a direction parallel, and not at right angles, to the Cell-Galleries and Inspection-Galleries—I give them Pully-doors with warning-bells where they open into the Galleries—I carry them down
to

to the sunk story below the Cells—I make them at the utmost not wider than the Galleries.

1. I make two of them, partly to shorten in some degree the passage to each, but principally to provide for the separation of the sexes, if both are received into one building, as in a building of this kind they might be without inconvenience.*

2. I make no more than two. In a building for ordinary uses this number might be scanty: it is not so in such an one as the present. The occasions on which they will be wanted are few: they may be all known and numbered.†

* See the Section on the *Separation of the Sexes*.

† 1. For meals they will not be wanted. The provision is hoisted up to the Cells in trays or baskets, by cranes, one on each side: a tray for each story of Cells. In each story one or two prisoners distribute the contents among the Cells. Two double Cells being taken off by the Dead part, nine remains on each side, with an odd one in the middle: this makes at two prisoners to a Cell, to each story twenty messes to be hoisted up on each side: at three prisoners to a Cell, 30.

There remains only airing-times as far as the prisoners are concerned. On Week days I air them by walking in a wheel without doors, [See the section on Airing.] Airing times occur for each prisoner but twice in the twenty-four hours. Were it much oftener, the time employed in descending and reascending would not be altogether lost: it would go in part of exercise: a necessary article of regimen

3. I place the staircases of different stories in one pile one over another not in a spiral running

given for sedentary employments which *cæteris paribus* I prefer for reasons herein after given.—See § on Employments.

Inspectors, Keepers as such, have scarce any occasion to enter the Cells. Stationed no more than 25 foot from the most distant part of a Cell, and from the nearest no more than eleven, nothing but the occasion of taking a minute examination of some small object can summon them thither. Once a day at most will be amply sufficient. The prisoners they let in and out of their Cells, without quitting their own station, in manner hereafter described. They have besides for their separate use, if necessary, the Lodge-Stair-case for their lowest floor, and the company's Stair-cases for the two floors above it.

For Task-masters as such, the occasion to use these Staircases is but little more frequent. Their business lies in the Cells: all day long, unless it be at mealtime, they will be in one or other of the Cells. Raw materials may be distributed, and finished work collected, at stated periods, in the same manner as the provisions. This operation may be directed by the Inspectors without stirring from their Galleries. If a Task-master as such looks to it, it will be without going backwards and forwards on purpose, once upon his entrance upon his business, and once upon his leaving it.

With prisoners who work at trades they have been bred to, Task-masters will have nothing to do. In many instances instruction may be conveyed from the Inspection Gallery: and so far there are no Task-masters distinct from Keepers.

In ordinary Prisons it requires resolution to be a Keeper: a quality in which men who have been bred to sedentary trades are liable to be

round the building. In the latter case the prisoners in each side would in their ascent and descent pass each of them by the Cells of all the floors below his own. But such a perambulation would but ill accord with that plan of seclusion, which, from the mitigation given to it may and ought to be adhered to with the greater strictness. On the plan here preferred, the perambulation and thence the opportunity of converse is reduced to its least limits.*

4. I place them in the Dead-part. 1. Because by that means I do not make sacrifice of any of the Cells: 2. Because I thereby bring them within reach of the Governor or Sub-Governor or both, in such manner that those officers may give an eye that way, without quitting for the purpose the Projecting front, in which will be the principal abode of the one, and the occasional business of the other.

be deficient. But in a Prison where a Keeper never need see a prisoner, without either a wall, or a grating, or a space of seven foot between them, the most arrant coward need not fear being a Keeper. Courage is almost a superfluous virtue.

* The prisoners of a Cell nearest the Stair-case have no Cells at all to pass by: those of a Cell the most remote, but *nine*. Their instructions are—not to stop or speak as they pass: and for the observance of that rule, effectual security is provided, as will be seen under the head of *Airing*, as also a little below.

5. I place them within the interior boundary or back front of the Cells, and consequently within the line of the Cell-Galleries. This I do, that the width of the Cell-Galleries in that part may afford sufficient landing-place, as well for a prisoner when he has opened the door leading to the staircase from the Cell Gallery, as to an Inspector in his way to the prisoners' Stair-case from the Inspection-Gallery, of which a little further on.

6. Instead of carrying them home to a line with the fore front or exterior boundary of the Cells, so as to occupy the whole depth, I make them fall short of that line by a few feet, say four feet, exclusive of the thickness of the wall, and the apertures, corresponding to windows, that may be made in that thickness. In the space thus reserved I put water-closets, at least for the Governor's house on his side: more especially on his ground floor. In this recess he commands without being seen, a view of the Staircase: by which means he is *necessarily* obliged, as well as without trouble enabled, to give a look into the Prison once a day at least, at uncertain and unexpected times. The ground-floor is more peculiarly adapted to this purpose, since from that station his chance of getting a sight of the prisoners as they ascend and descend, extends to
the

the inhabitants of every story of Cells in the semi-circle on that side: Whereas on a superior story the chance would not extend to such of the prisoners whose Cells were situated in any inferior one.

7. The Stair-cases are of iron bars and not of brick or stone.—1. That they may be the more airy. 2. That one part may intercept the light from another as little as possible.—3. That the prisoners as they go up and down may be exposed as much as possible to view from the Inspection-Galleries in that quarter.

8. It is also for the latter reason that the flights of steps run parallel to the Inspection-Galleries. Had their course been at right angles to those Galleries, the Stairs being interposed between the prisoners in their ascent or descent and the Inspector's eye, would have screened them from his view.

9. The use of the Pully-doors, which on opening ring warning bells, is to give notice of the approach of a prisoner, upon an occasion mentioned elsewhere, to the Inspector, who by that means is summoned to let him into his Cell, and in the mean time to have an eye upon his motions.

10. I place the doors, as in a *Protracted-Partition*, crossing the Cell-Gallery at that part in its whole width

width, and consequently terminating in a line with the ballustrade: the door being hung on at the side nearest to the Cells, and opening *from* the landing place, behind which runs the Staircase *upon* the Cell-Gallery: and not from the Cell-Gallery *upon* the landing place. In this way, partly by the wall, partly by the mode of opening, the view is pretty effectually cut off, as between the prisoners on the Staircase and those within the Cells.*

11. In making the Staircases at all wider than the Galleries there would be no use. 1. There can never be any occasion for conveying by the former any thing that cannot pass along the latter. 2. There is not even so much occasion for width in the staircase as in the Galleries, since any thing that could not be conveyed by the staircases might be hoisted up into the Galleries by the crane. 3. Any thing that required greater width might be conveyed, either by the Lodge Staircase or thro' the Central Aperture, to the Inspection Gallery on that floor, and to the two higher floors by the Chapel-Visitors' staircases, of which presently.

* If it were worth while, the view might be still more completely cut off, by adding another door parallel to the former, opening upon the landing place.

§ 11. *COMMUNICATIONS—
INSPECTORS' STAIR-CASES.*

AS to the Keepers, Inspectors, or Task-masters, there are three sets of Staircases of which they may have the use. The two first are the two sets of Prisoners' Staircases just mentioned: the other set is that composed of the Lodge Staircase on the lower floor of the Inspection Tower, and the Chapel—Visitors' Staircases in the two upper ones.

In addition however to the Prisoners' Staircases there will be required for the Inspectors' from their Galleries short passages or Staircases of Communication traversing the Intermediate area. These I call the *Traversing* or *Inspectors'* Staircases.

To make the Inspector's Staircase I proceed in this manner. At the side of the landing place opposite to that in which I have placed the door, I carry the Cellular Partition-Wall all the way up, not only across the region of the Cell-Galleries, but also across the Intermediate area, so as to join the Inspection-Gallery. By this means a solid opaque back is given to these Staircases in every story:

story: and a compleat separation is made between the several piles of Cells with their Staircases and the remainder of the Dead part. Parallel to this, and between this and the pile of Staircase, doors, at the distance of about 4 foot, I place a thin partition all the way up, with blinded spying-holes running in the line level with the Inspector's eye.

Between the two run two narrow flights of steps, no more than about two foot wide each: by that which is nearest the thick partition, the Inspector descends to that part of the Prisoners' Staircase which is upon a level with the inferior one of his two stories of Cells; by the other, he ascends to that which is upon a level with the superior one: or *vice versa*. Each flight of steps, upon its gaining the landing-place is crossed by a grated door of equal width, made in the grating which on that side forms a boundary to the landing-place from top to bottom, and opening upon the landing-place. This door, which is kept constantly locked, the key being in the custody of the Inspector, serves when shut to keep the Prisoners from straggling out of their Staircase over the Inspector's Staircases, to pry into the Inspection-Galleries. Being of open work, it affords the Prisoners in their Staircase a sight, it is true, of an Inspector when crossing over

to them on his Staircase. But this transient exposure is no derogation to his omnipresence. To all who see him he is present: nor is he absent with regard to those who do not see him: since from his not being present where they can see him, viz. on his Staircase, it does not follow but that he may be present at some other part of his station, from whence he may be viewing him while he is himself invisible.

It is needless to dwell very particularly on the apertures which for the sake of ventilation may be made here and there in both these traversing partitions, as likewise in the interior transverse boundary of the Staircase, from whence the thicker of those partitions is continued: the use of them is to give room for currents of air to pass in a horizontal direction as well as in the perpendicular one.

Those which might be accessible to the prisoners, viz. those made in the partition wall of the prisoners' Staircase, are in dimensions not big enough, to give passage to the body of a man or boy: situated out of the reach of the prisoners, they are closed by opening or sliding windows or shutters, capable of being opened and shut by a pole, to which the Inspector has access, and the prisoners not without his leave.

COMMU-

§ 12. *STAIRCASE FOR CHAPEL VISITORS,*
 AND FOR THE
OFFICERS APARTMENTS.

TO the Staircase for company resorting to the Chapel, I allott the middle one of the five piles of Cells. Of the lowermost of these half the height is occupied by the upper part of the Diametrical passage through the sunk story. The passage to this Staircase, 20 foot in length, taking that for the depth of the Projecting front, will be right over the above mentioned Diametrical one. To reach this elevation there will be an ascent of $4\frac{1}{2}$ from the ground to be performed by 7 or 8 steps.* To light it, which can only be done from above, will require the sacrifice of the center one of the 5 uppermost Cells, the four others of which are destined for the Infirmary. The reasons for

* This inequality is owing to the want of coincidence between the stories of the Inspection Tower, and those of the surrounding Cellular part: an irregularity produced by the contrivance of allowing two stories of the part to be inspected to each story of the part from whence the inspection is to be performed.

using iron not applying here, I make this Stair-case of stone. Being in use only on Sundays for promiscuous company, and then for no more than four or five hours of that day, it may serve for the Officers' apartment on each side: on which account the expence of stone need the less be grudged.

By two passages, one over another, and crossing the Intermediate area, it will distribute the different companies to their respective seats through the channel of the Inspection Galleries. Of these passages the lower one is upon a level with the area of the Chapel: the upper one, upon a level with the uppermost Inspection-Gallery. The area of the Chapel being $4\frac{1}{2}$ foot below the level of the middlemost Inspection-Gallery behind it, the passage divides itself into three. The central part reaches the Chapel area without change of level, by a trench cut through the Inspection-Gallery to that depth: on each side of it is a flight of steps, 7 or 8 in number, by which such of the company as propose to sit in the lowermost of the two Chapel-Galleries will be conveyed through the Inspection-Gallery of that story to that elevation. The uppermost passage, having no area to lead to, will be uniformly on an elevation with the Inspection-Gallery and Chapel Gallery to which alone it leads.

leads. The Inspection-Galleries, encircling all round the Chapel Galleries to which they are respectively attached, will discharge the company through doors made in any number of places that convenience may point out. The company who go to the area of the Chapel will have an ascent of $13\frac{1}{2}$ feet to make to reach their destination: those who go to the lower Gallery, 18 feet: those upper, 36 feet.

With the Company's Staircase and the passages attached to it, the Prisoners' Galleries and Staircases, it may be objected that these possess an indirect communication. But so must every part of every prison with every other and with the exit. In the present instance this communication is not such as can be productive of the smallest inconvenience, either in the way of danger of escape, or in the way of offensive vicinity with regard to the company. To make use of the Company's Galleries in the way of escape, Prisoners must first have forced their way into one of the Inspection-Galleries. How is this to be effected? And at night should they, after having forced the grating of their Cells, attempt to force the door that opens from their Staircase into the Inspection Gallery, there they find the Inspector, whose bed is stationed close to that door, that he may be in constant

readiness to receive them. As to vicinity, the nearest part of the prisoners' Staircases will be at 12 feet distance, nor will they be any of them on any part of those Staircases at the time : the doors that open into them from the Cell Galleries will then be locked. As to view, the prisoners Staircases are indeed open : but this only in front, and the company's Staircases and Passages are closed : nor will they see any thing of the prisoners, till from their seats in the Chapel, they behold them at a distance on the other side of the Intermediate Area, ranged in order in their Cells.

§ 13. *CELL-GALLERIES.*

UNDER the name of Galleries have been mentioned, 1. The Prisoners', or Cell-Galleries. 2. The Inspection-Galleries. 3. The Chapel-Galleries. It is only the first that come under the head of *Communications*. The two others have been spoken of already.

Of the Cell-Galleries little need be said. Attached to the several stories of Cells, they hang over one another and over the Grated passage, which but for its grating would form a part of the Intermediate area. I give then four foot in width: with balustrades of about $3\frac{1}{2}$ foot high. These fences should in height be of more than half that of a man, not only to prevent his falling over unawares, but lest a desperate prisoner should by a mere push have it in his power to throw over a keeper or fellow-prisoner: more than the height necessary to afford that security is superfluous, and it tends to reduce the size of the packages capable of being hoisted up from the Intermediate area into the Cells.

I make them of bars rather than solid work for the sake of ventilation. and of iron rather than wood for the sake of strength and durability.

Underneath the Galleries runs the passage called the *Grated Passage*, of the same width with those Galleries, but on a level with the Intermediate area below, from which it is separated by a grating also of iron, and reaching from within the thickness of a man (or rather of a boy) of the floor of that area, to within the same thickness of the under surface of the lowermost Cell-Gallery under which it runs. Into this the prisoners are received upon their landing from the lowest Staircase, instead of being turned loose into the Intermediate area, where they would have unlimited access to the under Warehouses, and by introducing themselves immediately under the Inspection-Galleries, station themselves out of the reach of the Inspector's eye.

Through this Grated Passage there must be doors which may be of the same materials, to give access to servants, or prisoners employed as servants, to the fire-places, and other offices under the Cells. On each side of the Diametrical-passage there must be at least one pair of such doors, and there may be any greater number that convenience may require.

The

The form of the ballustrades is not altogether a matter of indifference. On account of cheapness and transparency, the upright bars should be as few and as slender as the regard due to strength will allow. On account of safe-custody, the form should be such in every part as to preclude a prisoner from taking a spring from them, so as to jump upon the roof of any of the Inspection-Galleries, which, in a horizontal line, will in the nearest part be at not more than 8 foot distance. On this account the upright bars, instead of finding separate horizontal bars at bottom to meet them and afford them support in a line exactly under them, are inflected towards the bottom, and the perpendicular part and the horizontal being both in one piece, the former receives sufficient support from the latter, and the first transverse piece that presents itself capable of affording a man a treading place to spring from, runs two or three inches within a perpendicular let fall from the rail. Prevented in this way from rising to an upright posture by the overhanging rail, it would be impossible for the most active jumper to take the smallest spring: he would tumble directly down like a dead weight. Such a configuration may often be seen in balconies, though given without any such view. On the

the same account the rail, instead of being flat should be brought to an edge, in such manner that the section of it shall exhibit a triangle, either equal-legged or right-angled: and if right-angled, with the right angle within-side, so that the side opposite the right angle may form a slope too steep to spring from.

These precautions, which would neither of them cost any thing, seem abundantly sufficient: if not, there are a variety of ways in which the deficiency might be effectually made up: though perhaps not without some little inconvenience or expence.*

* For instance to crown the rail with spikes, which should be sharp and slender: or to let fall, from the bottom of the balcony above, a row of bars projecting in such a manner as to render it impossible for man or boy to stand upon the rail, in a posture sufficiently near to an upright one to enable him to take a spring.

DOOR

§ 14. DOORS.

THE only ones that need any very particular notice are the *Folding-doors* that form the grating to the Cells. These Folding-doors open outwards: 1. Because by this means they may be made so as when unlocked, to lift off the hinges, in order to give admittance to machines and bulky packages: and this, as I am assured by my professional guide, without prejudice to the security they afford: 2. Because the opening of them inwards would be productive of continual embarrassment, unless within each Cell a space, equal to that required for one of the leaves to turn in, were left vacant and of no use. The two leaves I make unequal: the lesser something less than 4 foot, the width of the Gallery: the larger, will of course take the rest of the space, viz: about 6 foot. The lesser is the only one I design to open on ordinary occasions: were it equal to the other, that is, were it about 5 foot, its excess of length, when open, beyond 4 foot (the width of the Gallery into which it opens) would

would prevent its opening to an angle so great as a right angle: whereby the passage it would afford to bulky packages would be proportionally narrowed.

As to *locks*, those contrived by the Rev. Mr. Ferryman, for the late Mr. Blackburn, and by him made use of in the construction of the Gloucester Goal, I trust to upon the report of that ingenious architect as incapable of being picked: as such, if they are not dearer than ordinary ones in a proportion worth regarding, they will of course demand the preference. But the inspection principle, without detracting any thing from the ingenuity of the invention, takes much from the necessity of that and many other prison contrivances. For in a Panopticon what can be the necessity of curious locks? What are the prisoners to pick them with? By what means are they to come at any sort of pick-lock tools, or any other forbidden implements? and supposing the locks of these doors picked, and the locks of more than one other set of doors besides, what is the operator the better for it? Lock picking is an operation that requires time and experiment, and liberty to work at it unobserved. What prisoner picks locks before a Keeper's face?

An appendage which will have its use in the instance of every door to which the prisoners have access

access, is a *warning-bell* attached to it in such a manner as to ring of itself upon every opening of the door. The door should likewise be made to shut to of itself, for instance, by the common contrivance of a weight with a line passing over a pulley. By the former of these implements the attention of the Inspector is drawn upon the prisoner: by the latter, the prisoners are prevented from rendering the bell useless by leaving the door open by design or negligence.

§ 15. *DIAMETRICAL PASSAGE.*

ON the sunk story, right through the center of the building, and leading from the approach through the center of the projecting front, runs the only thorough passage called the *Diametrical Passage*. It serves for the following purposes.

1. Admitting the Officers of the House and Visitors into the Inspector's Lodge. 2. Admitting machines and bulky packages into the Annular area, from whence they may be either conveyed into the Store-Rooms on that floor, or by pullies or cranes hoisted up into the Store-Rooms in the roof over the Cells.

Lengths of the Diametrical Passage.

From the door in the Projecting front to the circumference of the exterior circle of the Cellular part—say — — — — 20

From the circumference of the great circle to the exterior circle of the Intermediate area: viz. that part of it over which run the Cell-Galleries. — — — — *17

N. B. Here it meets the light from the skylight that crowns the Intermediate Area.

* In some of the impressions of the draught by mistake but 16.
Brought

Brought over ———— 37

From the Outer to the inner circumference of
the Intermediate Area ———— *11

From the inner circumference of the Interme-
diate Area to the circumference of the cen-
tral aperture in this story. — — †26

N. B. Here it again receives the light in
like manner from above.

From this anterior part of the circumference
to the posterior part ———— 12

From the posterior part of the circumference
of the central area to the inner circumfer-
ence of the intermediate area on the other
posterior side. ———— 26

N. B. Here it again receives the light.

From thence to the interior Circle of the Grated
passage under the Cell-Galleries on that side 7

————— 119

Here it is cut into three, in a manner that will
be described in speaking of the *Exit*.

On the details of this Staircase with regard to
situation, dimensions, and form, it is neither easy nor

* In some of the impressions by the same mistake 15.

† In some impressions by the same mistake but 23.

necessary at this stage of the design to make a fixed decision. They are left very much at large by the governing principle, and convenience on this head will depend in good measure on local circumstances, such as the form and dimensions of the Under Warehouse against which the Staircase will abut, and the form and dimensions of the Officers apartments on that side, in or near the Projecting front.

The form which in a general view appears most advantageous, is that of a straight and simple flight of steps without return or curvature. The convenience of a return is, that half the room is saved: the inconvenience of it is, that the space, a man has to traverse in order to reach a given point, is augmented, to the amount of what would be the whole length of the Staircase, if laid out in a right line. The point however at which it terminates and opens into the Lodge, should at least not go much beyond the central point of that apartment, lest through ignorance or design, access should be gained to the Inspection-Gallery and thence to the Cells, by visitors to whom such privileges might not be thought fit to be allowed.

Regularity

Regularity would require, but convenience does hardly, that on the right hand of the passage there should be a similar staircase.*

At the line where it falls into the anterior part of the Central Area, the Diametrical Passage is crossed by a pair of folding-gates of open iron-work occupying its whole width. These gates prevent promiscuous visitors from advancing any farther, and straggling either into the Warehouse on each side, or the posterior part of the Intermediate Area.

Before it reaches this transverse gate it receives no side doors on either side. Such doors, if opening into the anterior part of the Intermediate Area, would require porters to guard them: if into the Warehouse, viz. the space between the Intermediate and Central Area, they would render it less safe to make use of the labour of the prisoners in that part of the building.

The pavement of the Diametrical Passage being upon a level with that of the Annular Area, and the

* The right hand side of the Prison being for males, requires the most watching and the greatest resort, as well on account of numbers as of sex. Hence I make this side of the Lodge the principal one for the abode of the officers, and for the reception of customers and other visitors. It is therefore on the other side that the room for the Staircase can best be spared.

exterior surface of the crown of the Arch level with the floor of the lowermost Inspection-Gallery and that of the Inspection-Lodge, the *height* of this passage will be in the clear about 11 foot, and including the thickness of the Arch, 12 foot.

In the floor of the Lodge the Central Aperture will in the day be in general left open, in order to give light to the Central Area. At bed-time it might either be closed for warmth, or left open for security: in order to expose to the view and offensive force of a Keeper lying with a light in the Lodge, any prisoner or prisoners, who contrary to all human probability should have made such progress in a project of escape, as to find themselves in a situation to make an attempt upon the transverse gate.*

At the foot of the Staircase to the Lodge might be a *door*, the opening of which should ring a

* The cover for the Central Aperture might be so constructed as to form, when lifted up on hinges, a parapet, answering the purpose of a balustrade, each quadrant turning upon a hinge at the circumference. There would only need a few bars to hook on horizontally, to complete the circuit. Or, though the aperture were circular, the cover to it might be square. A central piece to lift off, of 4 foot diameter in the one case, or 4 foot square in the other, would reduce the height of the parapet to 4 foot.

warning-bell, to advertise the Inspector of the approach of visitors as he is sitting in his Lodge. In consideration of this security, added to that of the Porter stationed at the entrance into the Approach, the front door, opening from the Approach into the Diametrical Passage, need not be locked; nor will any such person as a Turnkey, or Porter to the house, be necessary. At the foot of the Staircase, visitors might be stopped from proceeding farther without ringing a bell and obtaining the assistance of the Inspector in the Lodge, which by the help of known contrivances he might afford without stirring from his seat.

To protect the Lodge, when thus thrown open, from the cold blasts of a thorough passage, it will probably be thought necessary to add to the grated gates above mentioned a pair of close folding doors: as likewise a similar pair of doors on the opposite or posterior side of the Central Area. With this defence from cold, there need be the less scruple about stationing a Keeper to sleep in the Lodge, with the Central Aperture open in the floor.

 § 16. COMMUNICATIONS—

EXIT INTO THE YARDS.

THE Exit into the Yards is one of the nicest parts of the anatomy of the prison.

The Diametrical Passage when arrived at the anterior circumference of the farther side of the Annular Area, is absorbed by it: but recommencing at the posterior circumference, is there cut into three branches: a middle one, being a line of communication joining without discontinuance the Inspection-Gallery over-head to the *Watch-house*, or *Look-out*, that serves for the inspection of the Yards: and two lateral ones, one on the male, and the other on the female side. Taking their common departure from the grating of the Annular Grated Passage, they run on in parallelism, like a nerve, an artery and a vein.

The nerve which conveys to the most distant extremity of this artificial body the all-vivifying influence of the inspection principle—the line of communication

communication, I mean—at its origin in the Inspection-Gallery, preserves its level for some space: that is, so long as it hangs over the Intermediate Area, and till it reaches the region of the Cell-Gallery. While it does so, I call it the *Inspector's Bridge*: and, to distinguish it from a similar pass on the outside of the building, the *Inspector's Inner Bridge*. At that line, in order to fall within the width of the Grated Passage, and get from thence into the Arch that leads to the outside of the building, it makes a sudden drop.* Four feet being the whole width, two of them are allowed to form the slope at the descent, the other two are allotted to give room for the Inspector at the instant after his landing, and before any part of his body is within the Arch.† The space occupied by the first two of these four feet I call the *Inspector's Drop*;

* Of the making this sudden drop, instead of giving the line of communication in that part a regular descent, commencing at the Inspection-Gallery, one reason is, that it may not block up the Intermediate Area, and obstruct the introduction of bulky packages from the Diametrical Passage. Another use is, the forcing the Inspector to take a view, in his descent, of the Diametrical Passage and the Warehouses on each side, as will be seen presently.

† Two foot is no great thickness: but a man of greater corpulency is certainly not fit to bear an executive part in the government of a prison.

that occupied by the other two the *Inspector's Landing-place*. Under the lowermost story of the Prisoners' Cells all round runs a sunk story of Cells composed of arches of the same width, and depth, but wanting a foot and a half of the height of those which compose the Cells. That part of the line of communication which runs through and occupies one of these subterraneous Arches, I call the *Straits*. The whole width I divide into three passages: the middle one, being a continuation of the Inspector's Landing place, I call the *Inspector's Straits*. The two others, one on each side of the Inspector's Straits, receive the Prisoners and conduct them through the Arch from the Grated passage: these I call the *Prisoners' Straits*. The floor of the Inspector's Straits I make as much higher as the height of the Arch will admitt, above the floor of the Prisoners' Straits on each side: the reason is, that he may have the more commanding view of them, as he and they go out together. As a farther help, their floor may drop a step just before their arrival at this pass: and from thence it may sink a little further by a very gentle slope: * and the

* This slope would have the farther use of facilitating the carrying off the water employed in washing the Intermediate Area.

advantage

advantage would be encreased, by giving an arched form to the partition on the side of the prisoners on either hand, the curve bending *from* his side towards theirs. In this way the advantage given him may amount to about 14 inches, a superiority which, taking into the account the differences of height between man and man, seems to be as much as can be requisite. This superiority will be thus made out :

	f.	in.
Distance from the floor of the Cell above (thickness of the Arch included) to the floor of the Grated Passage beneath—	7	6
Fall of the latter floor by a step — —	0	10
Total depth of the floor on which the pri- soners tread, below the floor of the Cell	—	—
above — — — —	8	4
Thickness of the above Arch — —	1	0
Space allowed in height for the Inspector's passage — — — —	6	1
Distance of the Platform he walks upon below the floor overhead —	7	1
Distance of the floor the prisoners walk upon below the same level, as before	8	4
Subtract the Inspector's distance. —	7	1
Remains the height of the Inspector's foot above that of the prisoners. —	1	2
	14	In.

In point of *width*, the line of communication, at its origin from the Inspection-Gallery, and before it reaches the entrance of the Arch, has no particular limitation:* but at that pass, which I call the *Straits*, it must conform to the dimensions which the width of the Arch allows, after reservation of a sufficient space for the prisoners on each side. If any thing like difficulty occurs any where, it must be at the very entrance into the Arch, since from that pass it widens gradually to the Exit. Ought the width of all three passages to be alike? or should any, and which, have the advantage in this respect over the other two? The occasions which Inspectors will have to pass one another will occur but rarely: but in the instance of the prisoners, these occasions will be still more unfrequent. On week days, twice a day each prisoner descends to the Airing-wheel: but should they descend even in pairs, or three's, they would not cross one another at all: for one does not quit the Wheel till another has arrived there. Neither on Sundays is there any occasion for them to cross, at least at this particular spot: and all *their* motions may be

* Except with reference to the opposite Cell: of which it covers from a direct view, a width equal to its own. On this account, the narrower the better.

pre-determined and provided for. Restraint is suitable to their condition, freedom to that of the Inspector. A confined space will have the further use of cramping any exertions a prisoner might be disposed to use, in the view of bursting in upon an Inspector when engaged in so narrow a pass, with a partition between them of so little thickness.

Here follows then an example of the dimensions in point of width that might be given to these passages.

Clear width of the space for the male prisoners' passage, on the right hand side of the Inspec- tor's passage. —	At the en- trance into the Arch.		At the exit from the Arch.	
	f.	in.	f.	in.
—	2	6	4	2
Thickness of the partition of the Inspector's passage. —	0	7	0	7
Clear width of the Inspector's passage. — —	3	10	4	0
Thickness of the partition of the Inspector's passage on the female side. —	0	7	0	7
Clear width of the female pri- soners' passage. —	2	6	4	2
	10	0	13	6

Upon

Upon this view, the widths capable of being allowed are so much beyond what is absolutely necessary, as to leave a considerable latitude of choice.* The partitions may accordingly be made more or less thick, according to the nature of the materials. When the Inspector's passage, having gained the region of the Yards, assumes the name of the *Covered Way*, the partitions which bound it will naturally require the strength and thickness of a wall: while the prisoners' passages, having no longer any part of the building to bound them, will require each of them a wall on purpose, as will be seen under the head of *Outlets*.

To give the Inspector his possible view of the prisoners as they pass, there must of course be *sight-holes*. They may be closed with glasses. They ought to be conical: narrower on the Inspector's side than on the prisoners' side. Though these holes should on the different sides be on the same level, they will not yield to the eye of the prisoner, the thorough light: for they are considerably above his eye, and no line drawn towards

* If they were not, the Arch thus allotted to receive the line of communication might be made wider than the rest, upon the condition of giving the same extra width to that whole pile of Arches all the way up.

his eye from any hole on the one side, would pass through any hole on the other: another advantage in sinking the floor of the prisoners' passage below the level of the Inspector's passage. The wall of this passage, in the same manner as those of the Inspection-Gallery of which it is the continuance, should for the same reason be painted black: those of the prisoners' passages, for the opposite reason, kept as white and as glossy as possible.

The least convenient part of the whole is the *Inspector's-drop*.*

But out of this very inconvenience I extract a superior advantage. The descent is by a sort of ladder, deviating so little from the perpendicular as to oblige a man, in order to find footing as he goes down, to turn his face *to* instead of *from* the steps: in so doing he gets, and is obliged to get, a view of the Diametrical Passage and the Warehouse on each side; such as it would have been difficult to have given him by any other means. A rope or bar to hold by on each side, saves him from all danger,

* Two foot only in width to 11 foot 7 inches descent, leaves, at the large allowance of nearly one foot for each step, little more than two inches projection of each step beyond the one above it.

and

and even from all inconvenience beyond that of being obliged to turn himself half round.

A few inches below the level of the cieling of the Diametrical Passage, is a *sight-hole* in the partition that forms a back to the steps: through this, as he descends with his face to the ladder, he gains a full view of that passage: and on each hand another sight-hole, through which he gains a view equally full, through correspondent apertures, of the inside of the Warehouse on each side.* By this means the labour of the prisoners may be made use of with the less scruple in all those stations, without the necessity of stationing along with them in each place an Inspector on purpose, and yet without departing in this, any more than any other instance, from the principle of omnipresence.

As to the *relative width* to be given to this line of communication in its different parts, it admits of considerable latitude. The most natural course is to give it the same width throughout. In its whole width, whatever that be, it blocks up, not only the whole of the opposite Cell of the first story

* The Warehouses are laid out as far as convenience admits in such a manner as to favour this view, upon the *radial* principle, as explained under the head of *Outlets*.

of Cells, but even a part of the height of the second story: filling up the place of the Cell-Gallery in both instances. To give a passage round from the Cell-Gallery on one side to the Cell-Gallery on the other, requires some little contrivances, with relation to which it is not necessary to be either very particular or very determinate. In the upper one of the two stories the obstruction may be obviated, partly by lowering the cieling of the line of communication in that spot, partly by giving a step or two from the Cell-Gallery, on each side, to carry the passenger in that spot across and over the obstruction: in the lower one of the two stories, by cutting out of the Cell, all round the obstruction, a space sufficient to make a passage of equal width with the Cell-Gallery: viz. four foot.

It is scarce necessary to observe, that in order to maintain in this part the limitation set to the Prisoners' path, and to prevent them from straggling into the Intermediate Area: or clambering up the line of communication, so as to get at top of the Inspection-Gallery, or force their way in at the windows, the grating of the Annular Grated Passage must in its form be governed by the configuration of the parts in question, and apply itself to them with

with particular care: and where any part of the line of communication is within reach of the prisoners, either walking in their passage or abiding in their Cells, it should be of materials equally impregnable.

§ 17. *EXTERIOR ANNULAR-WELL.**

ALL round the polygonal part of the building, runs an Annular trench, which may be called the *Exterior Annular Well*, and its floor the *Exterior Annular Area*. In width I make it 12 foot: less than that not being sufficient to afford length enough to the line of communication in that part between the inside of the building and the Look-out in the Yards.† The floor, for the sake of carrying off the water, is 8 inches lower than the floor of the Prisoners' passage through the building

* This Well, except in its width, is but little different from the sunken Wells or Areas which are so common in the front of the London houses.

† See § *Outlets*. It might even be wider without inconvenience, and without any objection but the extra expence, which is only that of digging and paving. This degree of width, it is true, is not absolutely necessary any where else than close to the line of communication, to afford room for it to rise by a staircase to a level with the ground. But on account of light and air, it were better not to narrow the Area any where else,

which,

which, as mentioned in speaking of the Exit, is itself 10 inches below that of the *Interior Annular Well*.*

It is bounded all round by a *wall*, which after serving for the mere support of the earth from the area below to the surface of the ground above, is crowned by a parapet, reaching about 4 foot above that surface. This 4 foot added to the $7\frac{1}{2}$ foot and the $1\frac{1}{2}$ foot, *i. e.* to the 9 foot, makes 13 foot, the height which a prisoner who had let himself down into the Well would have to climb up before he could gain the Yards.

It is filled up and cut through in one part only, viz. at and by the line of communication above mentioned, running in the same direction with the *Diametrical Passage*.

The uses of it are as follow.

1. To give light and air to the sunken story under the Cells.

To prevent prisoners from escaping, upon the supposition of their having let themselves down from the windows. It answers in this point of view the purpose of a ditch in fortification on the

* Total 18 inches lower than the *Interior-Well*. It may be brought to this depth from 12 inches by a gentle slope.

outside of the building, in the same manner as the Intermediate Well that runs parallel to it in the inside.

3. To reduce the ascent which the Chapel Visitors have to perform in order to gain the Chapel, and to afford a place for a Kitchen and other such offices to the Governor's house, without sacrificing a ground-floor to that purpose, and lodging him and his family at an inconvenient height.

4. To afford all round a commodious place for cellaring, capable of being enlarged indefinitely as occasion may arise.

Were there no such trench cut on the outside, what would be the consequence?—Either

1. The building remaining in all other particulars the same, the ground must be brought close to it all round: or,

2. The story under the Cells must be omitted altogether, as well in the Cellular part as in the Inspection Tower: or,

3. That story must be raised above ground, and the whole building made so much higher.

In all three cases, the 2d and 4th of the above advantages would be lost. A prisoner who had let himself down from any of the windows would find nothing capable of preventing him from going on to the exterior wall: the convenience of cellaring

would be lost : and, the floor of the lowest story of Cells being even with the ground, there would be nothing to hinder the prisoners in the Yards from holding promiscuous converse with the prisoners on that story of the Cells.

In the first case too, the space under the Cells would be reduced to the condition of mere cellaring: not fit for any person to abide in, or pay frequent visits to, on account of the absolute want of free air: debarred in a great degree from the light, of which the Intermediate Well would at that depth afford but a very scanty measure. The Warehouses under the Lodge would likewise suffer in point of ventilation, by being deprived of the draught which might be occasionally made by throwing open the windows of the rooms under the Cells, at the same time with the doors opening from them into the Intermediate Area.

In the second case there would be no place for lighting fires under the Cells: no place for Warehouses any where: no means of conveying the Prisoners into the Yards, without giving them the faculty of promiscuous intercourse, by carrying them in their passage to and from their Staircases abreast of every Cell in the lowermost story of Cells. There would be no Diametrical Passage:

no

no means of conveying bulky articles into the Cells and Store-rooms over head, through the Intermediate Area: and that most indispensable of all apartments, that vital part of the whole establishment, the Inspector's Lodge, would be cut to pieces and destroyed.

In the third case, which is the least unfavourable one, the second and fourth, of the above advantages, as already mentioned, would be sacrificed, as also the third: 8 foot would be added to an ascent already greater than could be wished: and no advantage worth mentioning would be gained*

* The quantity of building would be the same: and the saving of the small expence of digging would be at least counterbalanced by the additional expence of scaffolding and workmen's loss of time in ascending and descending. The only saving would be that of the sunk wall of 9 foot high for the support of the ground: a purpose for which the slightest thickness of walling would be sufficient.

 § 18. *WINDOWS.*

Reaching low and Glazed; instead of high up and Open.

BEING informed that in a building of this height, and consequently of this thickness, glass would not cost more than wall, my instructions to the Architect were; *Give me as much Window as possible: provided they are not brought down so low as to render it too cold.* In consequence, I have two Windows in each Cell: each 4 foot wide and 5 foot high.

It was Mr. Howard that first conceived the prevailing antipathy to glass: it admitts prospect and it excludes air. Prospects seduce the indolent from their work: air is necessary to life. On any other than the Panopticon plan the antipathy may have some reason on its side: on this plan it would have none. Blinds there are of different sorts which would admitt air, without admitting prospect: Glazed sashes when open will admitt air. But blinds, as soon as the Inspector's back was turned, would be put aside or destroyed: and windows would be shut: for the most ignorant feel the coldness

ness of fresh air: and the learned only understand the necessity of it to health and life.—True: but in a Panopticon the Inspector's back is never turned. In this point, as in others, who will offend where concealment is impossible?

In Mr. Howard's plan observe what is paid⁴ for shutting out prospects. The tall must be kept from idling as well as the short: and a tall man may make himself still taller by mounting on his bed or standing on tiptoe. Therefore windows must not begin lower than seven foot from the floor. But above this seven foot there must be a moderate space for a hole in the wall called a *Window*: partly for this reason, and partly to make sure of sufficient height of ceiling, a Cell must be at least ten foot high in the inside. Such accordingly is the construction, and such the height of the Cells at Wymondham.*

To what climate is this suited? To the East or West-Indies: perhaps to some part of Italy: certainly not to any part of our three kingdoms. To what employments? To laborious employments, to employments that are to be carried on out of doors: to few that in such a place can be carried on within doors: to few indeed that can be termed sedentary

* See Sir T. Bevor's Letters in Annual Register for 1786. Letter III.

ones. What weaver, what spinner, what shoemaker, what taylor, what coach-maker, can work with drenched or frozen hands?

To mitigate the cold, and to exclude snow and rain, Mr. Howard allows a wooden shutter. But to do this such a shutter must exclude light. What is the wretched solitary to do *then*? creep into his bed, or sit down and pine in forced and useless indolence.

Mr. Howard with all this allows no firing. One would think from him there were no winter.

The thicker walls are, and the higher above the floor, holes in the wall instead of Windows are, the better they serve to keep out cold and rain: hence another reason for piling bricks upon bricks, and giving rooms in prisons the height of those in palaces.

In rooms that have no light that is not three or four feet above the eye, weaving can scarcely be carried on: from such rooms that profitable employment, that quiet employment, in other respects so well suited to an establishment of this kind, is therefore in all its infinity of branches peremptorily excluded. For this therefore among other reasons there must be other places for working in. Accordingly at Wymondham for 50 foot 4 by 14: 8
of

of Cells, you have on one part 20: 6 by 10 foot of work-room,* and in another part a work-room of the same dimensions for only 29 foot 4 by 14 foot 8 of Cells.†

At Wymondham these holes are guarded each of them inside and out by a double grating: a single one under the eye of an Inspector is enough for me. Were a prisoner to elude this eye, (though how he is even by night to elude the eye of a watchman, constantly patrolling, I do not know) and get through this grating, (though how a man is to force iron bars without tools I am equally at a loss to conceive) where will he find himself?—In the Yards?—No: but in a Well, in which he has a wall of 13 foot high to climb, as we shall see, ere he can reach the Yards. And were he over this wall where would he be then? In a space inclosed by another high wall, with three centinels in an inclosed walk, patrolling on the other side.

So far from there being any need of double gratings, the single grating need not have cross bars. It is not necessary it should be capable of resisting either long continued attempts, or violent ones.‡

* Viz. a little less than one third addition.

† Viz. a little less than one half of addition.

‡ There would be an advantage in placing it as near to the outside of the wall, and by that means as far from the inside of

If any where in any particular pile of Cells any unguarded circumstance in the construction afforded the means of descent otherwise than by climbing down instead of dropping, advantage could not be taken of the weakness from any other pile in the circuit: in the polygonal form the pro-

the Cell, as it can be consistently with strength: that is, so as not to be liable to be thrown down by a push, together with the brickwork or stone in which it is bedded. Why? Because by this means so much room may be gained to the Cells: the pier under each window forming a kind of dresser answering the purpose of a table.

Above the third story of Cells bars can hardly be deemed necessary. The window of the lowest being $10\frac{1}{2}$ above the sunken External Area, the following table, shews the heights from which a fugitive would have to drop from the respective windows upon a stone pavement: it being taken for granted that the Cell affords neither a rope, nor materials of which a rope could be made in the compass of a night, by persons exposed occasionally at least, if not constantly, to the eyes of a patrolling watchman.

		<i>f.</i>	<i>in.</i>
Lower story	————	10	6
Second story	————	19	6
Third story	————	28	6
Fourth story	————	37	6
Fifth story	————	46	6
Sixth story	————	55	6

jecting

jecting angles rendering it impossible to climb horizontally on the outside, from a window of any Cell to any window of the Cell contiguous on either side.

If fastened up in two places on each side, and in the middle at top and bottom, the gratings may want about 7 inches of reaching the brick-work at bottom, and about ten inches of reaching that at top: especially if they terminate at top and bottom, not in an horizontal bar, but in a row of perpendicular spikes: by this means little more than $3\frac{1}{2}$ foot in height of grating will serve for a Window 5 feet in height: and in width little more than $2\frac{1}{2}$ foot of grating will serve for 4 foot.

Among the offenders who are liable to be consigned to these scenes of punishment, it is but too common to see boys of little more than ten years of age. A thin person, boy or man, can generally get his body through, wherever he can pass his head: that is, if not hindered by the breadth of his body, he will not be by the thickness. But a person cannot press against the point of a spike as he could against a bar. From these *data* gratings might be formed requiring a much less quantity of materials than what is commonly employed, yet of sufficient strength for the present purpose.

§ 19. *MATERIAL*

§ 19. *MATERIALS*

Arched Work—Much Iron—Plaster
Floors.

THE peculiarities of the present plan are not confined to the head of construction: they extend in some degree to the *materials*. The abundant use made of *iron* will hardly fail to be observed.

In preferring brick or stone-work to wood, and in consequence arches to other partitions, it does no more than follow the plans already in vogue. Such a mode of construction is more particularly necessary in a Panopticon than in a building of perhaps any other form. The circumstance that renders it so peculiarly favourable to ventilation, renders it of course equally exposed, if made of combustible materials, to accidents from fire. Were a fire to begin any where, especially towards the center, it would spread all round, the wind would pour in from all quarters, the whole would be presently in
a blaze,

ablaze: and the prisoners, being locked up in their Cells, and even were there Cells open, deprived of all exit except through one or two narrow passages, would be burnt or suffocated before any assistance could be applied.

This at least would be the case were it not for the care taken to keep accumulated a large fund of water in the cistern at the top of the building, ready to be poured in whenever and wherever there may be occasion for it. But notwithstanding this assistance, and the great security against all such accidents afforded by the circumstance of unremitting inspection, as a building of this sort is designed for duration, and the difference in point of expence need not be considerable, it seems best to be on the safe side.*

The great use here proposed to be made of iron has been made on different occasions with a view

* In a Panopticon which required apartments of greater width than could conveniently be given to arches, some of the other modes of securing buildings against fire might be adopted: such as that of stopping the draught of air by iron plates, upon Mr. Hartley's plan: or by simple plaistering, upon Earl Stanhope's. Such superior width might be necessary in some manufactures: nor would it be incongruous to the object of the institution, where seclusion was out of the question, as in free Manufactories and Poor-houses.

to different advantages. Sometimes to admitt air, sometimes to save room, sometimes for the sake of strength. In all instances it has the advantage of being peculiarly impregnable to putrid contagion: even plaister, brick and stone not being in this respect altogether above reproach. Hence the great stress laid on frequent white-washing, wherever any of the three latter materials are employed.

It is partly on account of the admission it gives to air that I prefer it for both the Prisoners' Stair-cases, and for all their Galleries. In arched Galleries of brick or stone, besides that they would take up room, the air might be apt to stagnate. Substituting open-work to such close materials adds in effect so much in width to the Annular-Well. The interstices between the bars instead of forming an obstruction to a current of air, serve rather to accelerate it.

It was the consideration of the little room taken up by this material that suggested it to me as peculiarly well adapted to the purpose of affording supports to the Chapel. Brick pillars, of the thickness necessary to support so lofty a building, would afford a very material obstruction to the voice in its passage from the Minister to the Prisoners, when stationed in their Cells, or in the Galleries before
their

their Cells. It is on the same consideration likewise that I propose to make considerable use of it in the construction of the Inspection-Galleries. It is to obtain both these advantages that I make use of no other material for one entire boundary (viz. the interior one opposite the windows) of every Cell.

To obtain that sort of strength which consists in inflexibility, with less unweildiness and at a less expence of materials, it occurred to me to make the pillars hollow. Being of iron, they may thus be made not only to take up beyond comparison less room, but even to possess greater strength, even when hollowed to such a degree as not to exceed brick or stone in weight. It occurred to me that iron was cast in large masses to serve for water-pipes. Upon enquiry at a great foundery where it is cast for such purposes, I learnt that in that manufactory it could be cast hollow for a length of 12 foot, but no more. Upon consulting with my professional adviser, I was informed that that length could be made to suffice: and it occurred to him that of the eight supports which would be a sufficient number for such a building, some might be made to answer the purpose of water-pipes for conveying the water from the roof: and to me that others of them might be made to serve for chimneys: articles for which

it

it might otherwise be not altogether easy in a building of so peculiar a construction to find a convenient place.

In point of economy I hope to find this useful material not more expensive, but rather less so than the quantity of stone or brick-work that would be requisite to answer the same purpose.* Since cast-iron, and in most instances, even that not of the finest quality, would answer as well as hammered with half the expence.

It is at the recommendation of the same intelligent artist that I adopt those called stucco or *plaster floors*, in preference to any other: and this for a variety of reasons.

1. They are incombustible. In this respect they have the advantage of wooden floors.

2 They take up very little room. The thickness of $1\frac{1}{2}$ inch over the brick-work at the crown is sufficient. In this point they have the advantage over all other floors, and most of all over wood, which besides boards require joists to lay them on.

3. They are uniform without crevices or interstices. In this respect they have also the advan-

* In Hughes's Riding Amphitheatre, near London, the supports, I am told, are of iron silvered.

tage over all other floors: in the highest degree over brick, then over wood, and even over stone. The inconvenience of crevices and interstices, as well remarked by Mr. Howard, is to harbour dirt, and occasionally putrescent matter, capable of fouling the air, and affording ill scents.

4. They are cheap. When thus thinly laid, much cheaper than wood, or stone, or even than any choice kind of brick, such as clinkers: and full as cheap as any tiling that would be proper for the purpose.

5. They are, it is true, liable to crack: especially on the first settling of the building. On the other hand, if a crack takes place, they are easily and effectually repaired.

Mr. Howard lays great stress on the unwholesomeness of such floors, as by their roughness, such as unplained boards, or by numerous and wide interstices, are apt to harbour putrescent matter: but I know not that he any where recommends plaister floors, which are freer than any ordinary floors from that inconvenience.

 § 20. OUTLETS,

Including Airing-Yards.

ARE *Airing-Yards* to be looked upon as a necessary appendage to the building?—If so, what *extent* ought to be given to them?—Ought any and what *divisions* to be made in them corresponding to so many divisions among the prisoners? In what manner may the influence of the inspection-principle be extended to them to the best advantage?—The answers to these questions will depend partly upon the general plan of management in view, partly upon local circumstances.

Of these points the first and third are considered under the head of management:* and the result is, that Airing-Yards to be used on working-days are not essential to the establishment: but that for Sunday's use they would be at least convenient: that if both sexes are admitted, one division, and consequently two separate yards are indispensable: but that, as between prisoners of the same sex, the

* See the sections on *Employment, Airing, and Schooling.*

advantage to be gained by any further division seems hardly decided enough to warrant the expence.*

Whatever be the extent of the Airing-ground, and whatever the number of divisions made in it, two erections must at any rate be made in it, in order to extend to these exterior appendages the all vivifying influence of the commanding principle: 1. *A Look-out or Exterior Inspection-Lodge*: 2. A line of communication for Prisoners as well as Inspectors, between this Look-out and the building. Let the Look-out then be considered as occupying the center of a circle: of this circle the line of communication forms one radius: from the same center may be projected as *co-radii* walls in any number corresponding to the number of divisions pitched upon.* See plate III.

* The numerous Yards in Plate III. are given only by way of illustration, and to shew upon what principles the topographical division, were it to be judged necessary, might be performed to most advantage.

* In the magazine of expedients the most simple is seldom that which first presents itself to our search. In the first hasty design, as sketched out in the Letters, it was by a surrounding Gallery that the influence of the inspection principle was to have been extended to uncovered Areas: and this Gallery was to have been attach-

In section 16 we left the line of communication at the spot at which, having cleared the building, it cuts across the external Annular Area. But at this spot it is considerably below the level of the ground in the yards through which it leads. The surface of the ground I suppose exactly on a level with the floor of the lowermost story of Cells: which floor is 7 : 6 above the level of the Intermediate Area. The floor of the prisoners' passages, being 10 inches below the level of that Area, has 8 : 4 to rise before it comes to a level with the surface of the ground. That of the Inspector's passage, being 5 inches above the level of the same Area, has consequently but 7 : 1 to rise before it comes to a level with the ground. But in the straits under the Arch we gave the Inspector the advantage in point of ground over the Prisoners to the amount of 1 : 3: and for this advantage there is the same occasion in one part of the line of com-

ed to the surrounding wall. The advantages of centrality were thus thrown away without necessity, and without any advantage in return. In point of expence the disadvantage might be more, and could not be less, than in the proportion of a circumference to a semi-diameter—about six to one: and the Galleries would have diminished in effect, to the amount of their height, the height of the wall to which they were attached.

communication

munication as in another. Adding therefore this rise to that of 7 : 1 which the floor of the Inspector's passage has to make in order to reach the level of the ground, we have 8 : 4, which is the same rise as that given to the Prisoners' passages. In this way the two floors preserve their parallelism during the whole of their course.

The particulars of this course may be thus made out—

Prisoners' passage on each side—Lengths—

Exterior landing-place from the outside of the wall of the building to the commencement of the flight of steps which *f. in.*

may be called the *Prisoners' Rising-stairs.* 2 0

Prisoners' emerging or rising stairs, from the exterior landing-place to the *Prisoners' Bridge.* ————— 8 4

Prisoners' Bridge from the Prisoners' rising steps to the *Prisoners'-Lanes*, running parallel to the Inspector's *Covered-way*, on the surface of the ground through the yards. ————— 1 8

Underneath this flight of steps there is ample room left in the exterior Annular Area as well for passing as for conveying goods. Before it has advanced in length to within four feet of the wall

L 2

bounding

bounding the External Area, it is more than 6 foot above the level of that Area in that part: and at the surrounding wall, 9 foot.*

Inspector's Passage between the Prisoners' passages
 —Lengths—

The same as above: the difference, which is only in point of level, being the same throughout, except that in this passage the flight of steps gaining the level to which they lead a little earlier than in the Prisoners' passage, the *Inspector's-Bridge*† is a few inches longer than that of the Prisoners.

As to the floor of the Prisoners' Rising-stairs, iron seems preferable, partly for the reasons which plead in general in favour of that material, partly on account of the small degree of thickness it requires. A wooden floor, or a brick floor supported upon an arch, might reduce the height above the floor of the Exterior Well to such a degree, as to make it necessary either to sink the floor of the Well in that part still more, or to increase the width.‡

* This comes from the pavement of the Exterior Area being sunk in that part 1 : 6 below the level of the Internal.

† To distinguish it from that within the building, I call this the *Inspector's Outer Bridge*.

‡ The roof of the line of communication, as it emerges from the building, affords a landing place to the windows of the Cells immediately above, by which the prisoners, could they get out of
 the

From their emersion out of the building the three passages should be covered through the whole length of their course across the External Area: that of the Inspector, for the sake of obscurity, as well as for the sake of protection in bad weather: the two Prisoners' passages on each side, partly for the latter reason, but principally to cut off converse with the Cells immediately above: for which reason they must also have a back reaching up all the way to the roof, so as to form a compleat case.

the windows, might at night-time find their way into the Yards, and be so far on their way to an escape. To obviate this danger, it is evident that the gratings to these windows ought to be constructed with a degree of caution, which would not be equally necessary in any other part of the circuit.

It would be tedious to particularize in this manner every little weak spot which the details of such a building may disclose. Wherever they present themselves, the weakness will not be more obvious than the means of remedying it.

The Cell immediately over the Straits loses, it will be observed, a considerable share of its light, partly by means of the Inspector's Bridge within side the building, partly by means of the whole line of communication on the outside. Many employments might be mentioned for which the degree of light remaining after these defalcations, would probably be insufficient: but as employments are not wanting for which it would certainly be sufficient, the deficiency affords no reason for considering this Cell as lost to the purpose of habitation.

When the Prisoners have got the length of the Lanes, or of the yards on each side, that is at the least near 13 foot distance from the building, the interception of converse must, as it safely may, be trusted to the expedients employed for preventing those in the Cells from looking out of their windows.

When the Prisoners are a few feet advanced beyond the External Area, they come to a *Door*, which lets out upon the open ground such of them as belong to the two yards immediately contiguous on each side: since it would be useless to carry them on to the Look-out, only to return them from thence into those yards. If there are no more divisions, no more yards, than these two, here the Prisoners' Lanes terminate: if there are other yards, the lanes lead on till they terminate in the common Central Yard encompassing the Look-out. The Inspector at any rate has his door corresponding in situation to those just mentioned.

The *Central-yard* is a circular or rather Annular Yard, encompassing the Look-out. It serves for the discharge of the different classes of persons into their respective yards. That the individuals thus meant to be kept separate may not have it in their power to straggle into the Central Yard and there meet,

meet, the entrances into their several yards are closed by gates or doors. Left by a mutual approach towards their respective doors, they should obtain an opportunity of converse, the doors are placed, not in the circumference where the walls terminate, but in a set of short Partition-walls joining the respective walls at a little distance from the ends: the intermediate portion answering the purposes of the Protracted Partitions spoken of in Letter II. in the first rough sketch of the building. A wall, carried through the Central Yard so as to join the Look-out, perfects the separation between the male and female side.*

Near to the lateral doors opening from the Covered way on each side, will be the situations for the *Airing-Wheels*:† the numbers and exact situations of which will depend on local circumstances, and on the details of the plan of management pursued.

Hereabouts too might be the *Temperate Baths*, or *Bathing Basins*, in which Prisoners might at stated hours be obliged to wash themselves. By means of a slight awning these baths might easily be concealed from the view of the Prisoners in the build-

* N. B. This protracted separation-wall is not represented in the Draught.

† See the section on *Airing*.

ing, while they were fully exposed to the observation of an Inspector, (or according to the sex an Inspector) from the Look-out.

Made long rather than circular, they would be the better adapted to the purpose of enforcing such a continuance in this state of discipline as should be deemed expedient. The Prisoner being required to pass through from one end to the other, the number of traverses would thus afford as exact a measure as could be wished for, of the degree of discipline to which it were proposed to subject him.

Of the construction of the *Look-out* it seems hardly necessary to attempt a minute description. It should be polygonal, that form being cheaper than the circular. It might be an octagon: or, were the number of the Airing-yards definitively fixed, the number of its sides might be the same with that of the Yards, the walls of those divisions corresponding to the angles of the building. The fittest form and size for it would vary according to local circumstances and the plan of management. The precautions relative to the *thorough light* need not here be so strict as in the prison, the greater distance rendering the figure when obscured by blinds more difficultly discernible: and the obscurity would be

be farther favoured by heightening the elevation. Experiment would easily show what sort and thickness of blind was best adapted to the purpose. If a strict inspection be required, the Inspection-Lantern already described would furnish a proper model: if a looser were deemed sufficient, a room employed as a work-shop in some sedentary trade, such as that of a taylor or shoe-maker, might answer the purpose. In the capacity of apprentices or journeymen, he might have a few of the most orderly and trust worthy among the Prisoners. On working days, according to the plan of management here proposed, he would have nobody to inspect but such of the Prisoners as were occupied for the time being in walking in the wheels: at that time he would of course front that way as he sat, and a casual glance stolen now and then from his work would answer every purpose. It is on Sundays, and on Sundays alone that the Prisoners in general would be at certain hours in the yards: and during those periods he might give his whole time and attention to the business of inspection, as it would then be his only occupation.

A male and female Inspector might here also be stationed under one roof: whose inspection might, by the means explained in another place, be

be confined to their respective divisions. This junction and separation would of course be necessary, if a bath for females were placed near the Walking-wheel on that side.

As to the degree of spaciousness to be given to the Yards—in a general sketch which has no individual object in view, to specify dimensions will be seen to be impossible: principles with illustrations are the utmost that can be expected.

The objects to be attended to are, on the one side, *room* and *ventilation*: on the other *facility of inspection*, and *cheapness*.

To estimate what may be necessary for room, it would be necessary first to settle the operations that are to be carried on in the Yards, and the articles that are to be placed in them: Such are

1. Airing-wheels: enough for supplying water to the building. See section on *Airing*.

2. Additional number of Airing-wheels: in the whole, a wheel (say) to every 18 persons, or a proportionable number of double, treble, or quadruple wheels. I call the wheel a single, double, treble one, &c. with reference to the number of persons that are to be set to walk in it at once.

3. Machines

3. Machines to be kept in motion by such supernumerary Airing-wheels.

4. Bathing-basins, one or two according to the sexes.

5. Open schools, for Sunday's schooling. See the section on *Schooling*.

6. Walking or marching-parade for Sunday's exercise.

As to ventilation, though a distant object, it is one that will hardly require a distinct provision. A space that affords room enough for the walking-parade can scarcely be deficient in point of airiness.

In ventilation much depends upon the form of the ground. A declivity is in this point of view preferable by far to a dead flat. Place the building upon a rising ground, the wall though a high one may be but little or not at all higher than the surface of the ground is for some distance round the building. So far as this is the case, so far the walls afford no obstruction at all to the current of air.

But even in a dead flat, there seems little necessity for bestowing any expence, in giving on this score any addition to the quantity of space absolutely necessary for the marching exercise above alluded

alluded to. Noxious trades out of the question, the only imaginable sources of contamination to which the air is exposed are *putridity* and *respiration*. Against the former, sufficient security may be afforded by the discipline of the prison:—no hogs; no poultry; no dunghill; no open drain; no stagnant water. As to mere respiration, it can scarcely be considered as capable of producing the effect to a degree worth notice, in a place ever so little wider than a water-well, if open to the sky.

As to facility of inspection, it is obvious that the longer you make your Airing-yard, the less distinct the view which the Inspector will have of a Prisoner at the further end of it. But the consideration of the expence will be sufficient to put a stop to the extension of this space, long enough before it has acquired length sufficient to prejudice the view.

In speaking of the *expence*, I do not mean that of the ground: for that, every where but in a town, will be of little moment: but the expence of the walls. I speak not merely of the surrounding wall: for, whatever be the height of that wall, the separation-walls, if there are any, cannot, as we shall see, have less. For the surrounding wall, according to the common plans at least, no ordinary height

height will suffice. But, by doubling the height of your wall, you much more than double the expence: since if you would have it stand, you must give it a proportionable increase of thickness.

The height of the separation-walls I have said, must not be less than that of the surrounding-wall—why? because if the former join on to the latter, they must be of the same height, or whatever height is given to the surrounding wall is so much thrown away. The attempt, if any, will of course be made at that part where the wall is lowest, which will serve as a step to any part which rises above it. Let a wall of 12 foot be joined by another of 6 foot: what is the obstacle to be surmounted? Not one wall of 12 foot, but two walls of 6 foot each. In fortification, the strength of the whole is to be computed, not from the strength of the strongest part, but from that of the weakest.

That the separation-walls should join the surrounding-wall, is not indeed absolutely necessary: but whether the discontinuance could in any instance be made productive of any saving upon the whole, seems rather questionable. They may indeed be left short of it to a certain distance: the gap being supplied by a ditch: to which the persons meant to be

be

be separated on each side, may be prevented from approaching near enough for the purpose of converse, by a pallifade, which may be a very slight one, being intended rather to mark transgression than to prevent it. In the day time there will be no possibility of approaching the ditch without detection, since it will be full in view: at night there will be no motive, as there will be no persons on the other side to hold converse with—no Prisoners in the yards. The ditch itself need not be continued far on each side of the wall: but the pallifade must be continued all along: for if it were to terminate any where it would be useless, and if it were to join the wall any where it would take so much from the height. But the pallifade however slight would cost something: and, what is more material, the space between that and the wall would be so much sacrificed: and the greater the space, the more extensive, and consequently more expensive, must be the wall. If therefore the surrounding wall should not rise much above the height, which for the purpose of preventing converse it would be necessary to give to the separation-walls, reducing the height of the latter by the help of the above expedient would not be worth the while.

But

But although no saving should be to be made in the height of the separation-walls, this is not the case with regard to such part of the general surrounding wall as is not accessible to the prisoners. What part that may be will be immediately conceived by turning to the Draught.—See Plate III. In a line with the Projecting front, continue the wall of the building on each side till it meets the two lateral of the four surrounding walls. To this wall, and to every wall that is behind it, must be given the same extra height, whatever that be. But, to whatever walling there is *before* it, no greater height need be given, than if there were no such thing as a prison in the case.

Thus much, supposing the necessity of high walls and multiplied divisions. But, if my ideas be just, both those articles of expence may be saved: the former, by the mechanical regularity of the airing discipline:—See the section on *Airing*.—the other, by the mode of guarding.—See the next section.*

* It may be thought, that the Walls here spoken of as not requiring any extra height might be omitted altogether. But, besides that they will be convenient for the inclosing of offices and officer's gardens, they are essential to the plan of guarding. For on considering the centinel's paths, it will be easily seen that it

The less the space is between the Look-out and that one of the four surrounding walls that runs at right angles to the direction of the Covered way, the nearer the two radii drawn towards the ends of such a wall will of course approach to parallelism. Direct them so as to terminate, not in the opposite wall, but in the two lateral walls that join it at right angles, and you have a long space, which without departing from the inspection principle

is necessary they should be regular, and that one of them should pass by the Approach. Add to this that the contrivance of the Approach supposes a wall all round, to serve as a barrier against a hostile mob.

One Wall indeed, which really is not only unnecessary but prejudicial, may be discovered on the Draught: into which it was inserted without special instructions, as a thing of course, and suffered to continue through inadvertence.

It is that which runs parallel to, and between, the wall through which the entrance is cut, and that which forms on each side a continuation of the Projecting Front. A fence in that part is indeed necessary: but instead of a close wall it ought to be an open pallisade.

The former, in contradistinction to the latter, weakens the *command* of the building over the space inclosed, and that as well in a military sense, as in point of inspective force. Suppose a mob to have mastered the wall on either side the entrance, an open pallisade exposes them to the ground floor of the building, whereas a close wall covers them.

might

might, if the employment presented any adequate advantage, be converted into a *Rope-yard*.

Why introduce here the mention of Rope-making? Is it that I myself have any predilection for that business? By no means: but others it seems have. My first care is on every occasion to point out that course which to me appears the best: my next is to make the best of whatever may chance to be preferred by those whose province is to it choose. To a gentleman whose information and advice upon this occasion particular attention appears to have been paid by a Committee of the House of Commons,* to this gentleman it occurred that rope-making was of all trades one of the best adapted to the economy of a Penitentiary-House. Of the many advantageous properties he attributes to it a considerable number may, for ought I know, belong to it without dispute. But in one instance at least, his zeal has got the better of his recollection. In rope-making “no implement employed that can contribute to escapes?”—To a seaman a rope is itself a Staircase. Will any charitable hand take charge of it on the other side of the wall? over goes the rope one instant—the next, over

* See Report of the Felon Committee printed in 1779.

goes the sailor.* And can no other hand support itself by a rope? Was La Tude a seaman? Will the walls of a Penitentiary-House be like the walls of the Bastile?—A vigorous arm will supply the place of practice. I speak but what I have seen.

Rope-making is perhaps of all trades known that which takes up the greatest space. Elsewhere it requires no walls: but here it must not only have walls, but those too of an extra height and thickness.

With all this, should any rope-making legislator, or any legislator's rope-making friend, make a point of it, in a Panopticon Penitentiary-House, I would even admitt a ropery. But in what character? as one of the most——no: but as one of the least promising of all trades. I would admitt it—not certainly in the view of favouring, but rather of trying the strength and temper, and displaying the excellence of my instrument. I would take my razor and hack stones with it: not as thinking stone-cutting the fittest employment for razors in general, but in the way of bravado, to shew that

* Even without an associate, a rope, by the help of a brickbat fastened to the end of it, will, I have been assured, carry a man over a wall.

my razor can perform what in ancient lore stands recorded as a miracle for razors. I would provide part of my prisoners with this gentleman's ropes, I would arm another part with another gentleman's sledge-hammers, a third part with another gentleman's cast iron—a fourth with a fourth gentleman's saws, taking my chance for my felons serving their keepers as the children of Israel served the Ammonites.—For what?—For security sake?—No: but just as I would set up a sword-cutlery, or a gun-manufactory with a powder-mill attached to it; if any gentleman would shew me such a measure of extra-profit attached to those trades, as should more than compensate the extra-risk, and the extra-expence of guarding and insurance.

Protesting therefore against this of rope-making as one of the least eligible of trades for any other prison, I would not, by any peremptory resolution, exclude even this from a Panopticon Penitentiary-House. Let Euristheus speak the word, and I will turn in serpents to my infant in its very cradle.—Why?—Is it that serpents are the best nurses?—No: but because my infant is an Hercules.

Recapitulation of the horizontal lengths of the several component parts of the line of communication between the lowermost Inspection-Gallery within the building and the Look-out in the Yards.

I. *Inspector's Passage.*

1. Inspector's <i>Inner-Bridge</i> (over the Intermediate Area.)	—	8
2. Inspector's <i>Drop</i> (within the circle of the Grated Passage.)	—	2
3. Inspector's <i>Inner Landing-place</i> (within the same circle.)	— —	2
4. Inspector's <i>Straits</i> (passage through the subterraneous Arch under the Cells.)		17
5. Inspector's <i>Outer-Landing-place</i> , from the termination of the Arch to the commencement of the <i>Rising Stairs</i> .	—	2
6. Inspector's <i>Rising-Stairs</i> , from the exterior Annular Area to a little above the level of the ground.	— —	8
7. Inspector's <i>Outer-Bridge</i> (over the remainder of the above Area) about	—	2
		—
		41
		8. Inspector's

8. Inspector's Covered-way	}	Undeterminable depending on the magnitude of the establishment and other local circumstances.
9. Steps up to the Look-out		

II. Prisoners' Passages on each side.

1. Prisoners' Straits	—	—	17
2. Prisoners' Landing-place		—	2
3. Prisoners' Rising-Stairs	—	—	8
4. Prisoners' Bridge, about	—	—	2
		—	
			29

5. Prisoners' Lanes	}	Undeterminable, for the same reason.

The Figure annexed represents an
AIRING, OR MARCHING PARADE.
It serves to shew how a given number of Men may be aired by walking, in the least possible space, without infringement on the Plan of Separation.

Length of the Parade, say — — — — — 150
 Width — — — — — 96

Number of feet in each walk — — — 6
 Multiplied by the number of parallel walks in the above width — — — 6
 Gives the number of feet occupied by the walks in the above width — — — 36
 Number of feet of vacant interval between walk and walk — — — 12
 Multiplied by the number of intervals in the above width — — — 5
 Gives the total number of feet of vacancy in the above width — — — 60
 Sum of the widths of the walks added to that of the intervals gives the total width as above — — — 96

Number of feet of interval between line and line in the same walk, say — — — 6

Number of lines capable of being contained on the above conditions in an area of the above dimensions, in the manner represented in the figure — — — 146
 Multiplied by the average number of men in a line — — — 3
 Gives the total number of men that may be aired by marching on a parade of the above dimensions, without approaching nearer than as above — — — 438

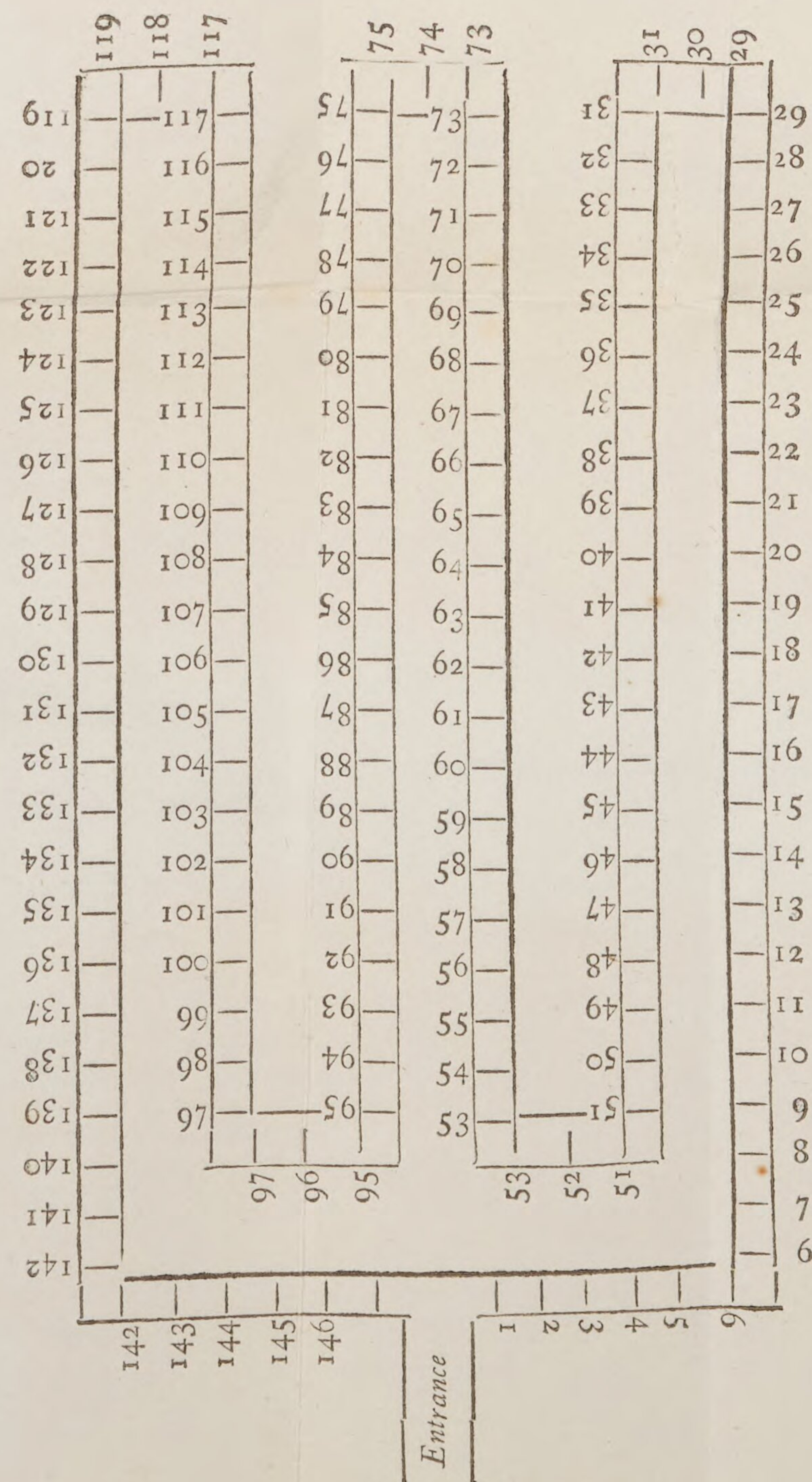
Each Cell is supposed to occupy a distinct line: the numbers in a line being 1, 2, 3, or 4.

The number annexed to each line shews the station occupied by each Cell when the figure is compleated.

The lines might be marked out by double rows of clinkers: the track of each man by a single row: and the walks, if necessary, by stakes and ropes.

At every turning the outermost man at one or other side turns a quarter-round, as in the military exercise, where his comrades on the same line, by a short run, gain the new line. Thus the exercise of running is combined with that of walking.

The number annexed to each line shews the station occupied by the inhabitants of each Cell when the figure is compleated.



This plan being designed merely for illustration, it was not thought worth while to bestow the pains that would have been necessary to give it a thorough discussion, and clear it altogether from the imperfections that may be observed in it. From this example it will be easy to accommodate the line of march to the form of the ground: giving it the radial figure, and making the entrance from the Central Yard. The walks would in that case diverge from one another in pairs at the farthest extremity, like fingers on a hand. But the greater the divergence, the more space will, it is evident, be consumed in waste.

The wheels, which on six days serve for gain as well as air and exercise, would there be any objection to their serving on the seventh for air and exercise without gain? If not, then even the walking-parade, with the expence of the walls with which it must be surrounded, might be struck out as superfluous.

The question would be particularly material in a town, where not only the expence of the walling might be grudged, but the ground itself might be unobtainable.

In such a situation, if the wheel-exercise were thought improper for Sundays, even the roof of
the

the building, might, if made flat on purpose, be made to answer the purpose of a marching parade: only in this case the space not being sufficient to air the whole number of prisoners at once, without breaking in upon the plan of separation, the half only or the third part can partake of the exercise at a time.

The same situation might, with like management, be made to serve likewise for the Schools, proposed to be held whenever weather will permitt, in the open air on Sundays. See the section on *Schooling.*

§ 21. *APPROACH AND FENCES.*

IN the contrivance of the Fences I had of course two classes of persons in view: the prisoners within; and hostile mobs, or such individuals as might be disposed to form plans or join in plots for the escape of prisoners without. To these were added, in the contrivance of the Approach, the subordinate Keepers, as likewise, though with a different view, the Chapel Visitors. While the government or corecion of the first three of these four descriptions of persons was to be provided for, the accommodation of the last, those still better than gratuitous Inspectors, who, instead of being paid for inspecting, may be content to pay for it, must not be neglected.

The Approach, I make *one* only: a walled avenue cut through and from the surrounding wall to the front of the building, thrown back purposely to a certain distance: say, for example only, 240 foot: twice the diameter of the polygonal part of the building neglecting the Projecting Front. The aperture

aperture thus made is closed by a set of *Gates* : a small one close to the *Porter's Lodge*, for foot passengers : next to that a larger one, for carriages to go in at, and beyond it one of the same size as the second, for carriages to return by. At the very entrance the avenue is contracted as much as it can be consistently with the abovementioned purposes : it grows gradually wider and wider as it approaches the building : arrived at a distance equal to the breadth of the Projecting front it stops short. Conceive a square having this front for one of its sides. In the opposite side, the walls that bound the avenue terminate. In the same line terminate two walls or other fences, which issuing at right angles from the front, bound the two remaining sides of the square. The avenue, though gradually expanded from the entrance to the spot where it falls into the square, wants on each side some feet of occupying the whole width. That interval is filled up on each side by a pair of *gates*, which, being of open work, afford to the building access to and view of the spaces on each side the avenue ; designed partly and principally for containing offices, and affording small gardens to the officers. In the center of the square stands a *Lamp-post*, or some such object, serving as a direction to carriages in turning : and from this
central

central mark to the pier between the two gates across the entrance, it might perhaps be found convenient at Chapel-times to keep a strained rope or chain, for the purpose of separating the path of the returning from that of the approaching vehicles; thus obviating the confusion which without such precaution is apt to arise in a throng of carriages.

The public road runs, according to local circumstances, either in the same direction with the avenue; or else at right angles to it, and parallel to the wall cut through to form the Approach. No public highway, either carriage road or foot-path, runs near to it in any other quarter.

Parallel to the Gates, and to the extent of the Gates, the road is bounded on the other side by a wall, which may be called the *Protection-Wall*: and behind it a branch of the road, which may be called the *Protection-Road*.

Why only one Approach to so large a building?

1. For the sake of *economy*:—the more Approaches the more Porters.

2. For the sake of *safe-custody* and *subordination*: the more exits the more places to watch, and the greater the danger of escape. And were there more exits than one, all would not be equally under

der the view of the Head-Governor. What if he and the next in authority under him, had each a separate exit under his care?—The inspective force would be diminished by one half: on the one side the subordinate would be withdrawn from under the controul of his principal; on the other, the principal would lose the assistance of the subordinate.

2. *Why throw the building back in this manner and place it in a recess, rather than close to the road, and flush with the surrounding wall?*

For *security*, and that in the first place against enterprizes from within. Suppose a Prisoner by permission, or by negligence, got out and landed at the front of the building: on this plan what chance has he gained of an opportunity of escape? He is inclosed in a defile, with the building at one end and the gates that open to it on the other: exposed on one side to the whole view of the front, and on the other to that of the Gate-keeper, without whose concurrence the gates can afford him no exit: and the prison habit betraying him to both. On the other hand, suppose a part of the building to have doors or windows opening to the highway: let a man but have got through any one of those apertures, he finds himself at large. What though the part thus bordered by the road should be no
part

part of the place designed for Prisoners, but only of the house or lodging of one of the officers, the Governor for example? Such places may not be always inaccessible to the Prisoners, at least to all of them. A Prisoner may be there by permission, engaged in some domestic employment: he may have stepped in thither on some pretence: he may have been let in on purpose by the infidelity of some servant of the house. Should even the Prisoners be all of one sex, there may be servants of the other. Of a prison so circumstanced, where is the part than can be sure of being always proof against the united assaults of Cupid's arrows and Danae's golden shower?

2. Against clandestine enterprizes from without. What enterprizes of this nature can be attempted with the smallest prospect of success? Without procuring the door to be opened by the Porter a man cannot pass the gate: he is then inclosed in a defile as before, reconnoitred all the while from the Lodge at one end, and the building at the other. The Gate which lets him in, might in the act of opening it, and without any attention on the part of the Porter, ring a warning-bell proclaiming the stranger's entrance and approach.

3. Against

3. Against hostile enterprizes by mobs. The enterprizes of mobs cannot, like the attempts of individuals, be sudden and secret: they have always a known cause. The guards are every where upon the watch.—Is mischief threatened? The Porter rings his bell. A centinel fires his piece. The force of the prison is collected in the front. What mob will make any attempt against the gates? No sooner have they begun, than they find themselves exposed to the fire of the whole front: that front more than twice the breadth of the space they occupy, and converging thither as to a point. There needs no riot-act: the *Riot-act* has been read by the first man who has forced himself within the gates. The line is compleatly drawn beyond all power of mistake: all within it are malefactors. The avenue is no public highway. It is the private inclosure of the Keeper of the Prison: those who force themselves within it do so at their peril.

In the ordinary state of prison-building, all preparations for an attack, every thing short of the actual attempt, may be carried on without molestation under the Keeper's nose. The rioters collect together in force, in what numbers they think proper, and with what arms they can procure.

What

What shall hinder, or who shall so much as question them? It is the King's highway: one man has as much right there as another. Let them have what arms they will, still who shall question them? Every man has a right to carry arms; till some overt act demonstrates his intention of employing them to a forbidden purpose.—Observe now the consequences.—The walls of the Prison are impregnable; its doors well fortified; windows looking to the highway it has none. But the Keeper's doors are like other doors: his windows, like other windows. A bar or a log will force the one: a stone or push will lay open the other. Where the Keeper enters, there may the rioters enter, and there may the Prisoners get out, when they are in the Keeper's place. The cuckoo is completely hedged in; except at one place which is not thought of.

At Newgate the building, including the Keeper's house, runs along the public footway: and the fate of that edifice at the disgraceful æra of 1780 displays the consequence. No impediment does it present, natural or legal, that can hinder any single man, or any body of men, from introducing their eyes or hands close to the Keeper's windows. A little army may come up with clubs and iron

CROWS

crows to the very door ready to force it open, and till the attack is actually begun, there is neither right nor obstacle to impede, much less power to hinder them.

All the other prisons in London, that I recollect, the King's Bench amongst the rest, are in the same predicament. Had the contrary precaution been observed, the tragedy of St. George's fields would hardly have been acted. The ill-fated youth, whose death drew forth in its day such a torrent of popular discontent, would not have fallen, or his fall would have been acknowledged to have been not undeserved.

In a great town, the ground may not always admit of giving the remedy its full extent: though to a certain extent, and that sufficient to give a vast advantage over the common plans, it might be made use of almost every where.

Even Mr. Howard's plan, though uncircumscribed by any considerations of local necessity, even Mr. Howard's plan of perfection in the abstract, has overlooked it. The piles of building allotted to the convicts are indeed placed all of them within, and at a distance from, the surrounding wall: but lodges for Porters, a house for a Chaplain, and another for a Steward or Storekeeper, form part of it.

Along

Along side, for any thing that appears, runs the public way: nor is there any thing to hinder a mob of rioters from forcing themselves in at the Chaplain's and the Steward's door and windows, till the outrage is begun.

Thus it stands upon the face of the engraved plan. His after-thoughts, so far from obviating the inconvenience in question, double it. His last opinion is in favour of “a spacious walk, clear of
“buildings, through the centre, with three courts
“on each side, and the Chapel and Chaplain's
“apartments at the opposite end, facing the Governor's own apartment.”*—Is the Chaplain then to have an outlet at his end, as well as the Governor at his? This will require another pair of Lodges (for the plan gives two) and at least one other Porter. At any rate the Chaplain and his family are out of the reach of lending an inspecting eye to observe the approach of those who come on the design, or with the pretence, of visiting the Governor, his family, or his servants. The inspective force at that end is *pro tanto* diminished, by the removal of that constituent part of it.—What Mr. Howard's reasons were for this change of opinion, he has not told us.

* *Cn Lazarettos*, p. 229.

No one can be more anxious than Mr. Howard to prevent every part of the building where prisoners are lodged from having windows to the street.—Why? Because such windows, besides affording converse, will let in spirituous liquors, not to mention implements for escape. Windows to the Governor's house, or the Chaplain's, will not indeed let in spirituous liquors, or any thing else into the prison clandestinely, but they will let in armed deliverers openly where they are in force.

3. *The Avenue why contracted at the entrance?*—The narrower the entrance the less the expence of the gates which close it, and the more perfectly it lies within the command of the Porter. At the spot where it reaches the building, were it no wider than it is at the entrance, it would scarce afford turning-room for carriages, much less the standing room which would be requisite at church-time. Were it of less width than the front, so much of the front as was excluded, so much of the inspective force which that part of the building furnishes, would be lost.

Of the total area inclosed by the general surrounding wall, the magnitude must of course depend upon a variety of circumstances, some of a more general, others of a local or otherwise particular

cular nature. Behind the building it will be occupied by the Prisoners' Yards, of which in the last section. In front of the building on each side of Approach, it will be occupied by exterior offices and officers gardens.

On the outside all round, at a small distance, (say 12 foot) from the wall, runs a flight *palisade* of open work. The intermediate space receives four *Centinels* whose paths flank and cross one another at the ends. The walls, instead of forming an angle, are rounded at the junctions. The palisade will serve as a fence to the grounds on the other side: but highways on which the public in general have a right to pass, whether carriage-ways, or simple foot-ways, are kept from approaching it as far as may be.

At two of the corners the place of the palisade might be occupied by two *Guard-houses*: each with two fronts to flank and command the two *Centinel's* walks. To one of these I should give such a situation and such a height as to enable it to command the *Airing-Yards*: but at that quarter in which it would be at the greatest distance from those destined for the reception of female prisoners, if that sex be admitted, it might have a Platform in that situation, and in that elevation,

without having any windows either way. It might have a communication with the Airing-yards, to be made use of in case of alarm and demand of succour from the Keepers in the Building or the Yards. The communication might be effected in any one of several ways: by a draw-bridge, by an underground passage, or by a ladder kept under lock and key: the key always in the hands of the commanding officer. To prevent converse between the soldiers and the prisoners, the doors opening into the Platform (for windows that way it has none) ought to be locked up, and the key kept in the same custody. It is for this same reason that I attach it, not to the wall, but to the palisade which is detached from the wall.

4. *Why the palisade?*—To cut off from the public in general all facility and all pretence for approaching the wall, near enough to attack the Centinel, to hold converse with the prisoners in the Yards, or to plant ladders or throw over ropes to enable them to escape.

5. *Why of open work rather than close?* a wall for instance, or a park-pale?—For cheapness:—and that nobody may approach it without being seen.

6. *The Centinel's walks, why crossing and flanking each other?*——That each Centinel may have two to check him. Who in such case would venture or offer to bribe any one of them to connive at projects of escape? the connivance of any one, or even any two would be unavailing.

7. *The walls, why rounded off at the meetings?**——To avoid giving the assistance which angles afford to the operation of climbing up in the inside. Add to which, that the greater the space thus rounded off, the greater the part of each Centinel's walk, which is laid open to the view of the two others.

As to the height of the wall, and the thickness, which will be governed by the height, the quantum of expence necessary on this score would depend upon the decision made as to the resorting or not resorting, to the military establishment for a guard. With this assistance, added to that of the palisaded walk, walls of very moderate height would be sufficient: say

* For this precaution I am indebted to Mr. Blackburn. In what instances, if any, he has himself applied it, I do not know. I took the hint from a history he used to tell of a man who, by the assistance of two walls meeting at a right angle, and an instrument of his own contrivance, used to convey himself in this way over the wall of the King's-Bench Prison in St. George's Fields.

8 or 9 foot, about 2 or 3 foot above the height of a tall man.* This height would be sufficient to prevent any intelligible converse between Prisoners and Centinels: forbidden conversation will not be carried on in a loud voice, in the ears and under the eyes of the superiors who forbid it. Without this assistance it might be rather difficult to draw the line.

By rejecting this assistance, the requisite quantity and expence of walling that *might* be thought requisite, might be encreased in another way. The higher the wall, the more obstructive to ventilation. The higher the wall, the more ample the space that on that account it might be thought necessary to inclose within it: and the greater that space, the more walling it would take to inclose it.

Did it depend upon me, though I would get a military guard if I could, yet even without such assistance, trusting to so many other safe-guards, I think I would put up with an 8 or 9 foot wall. In the Look-out sits constantly an Inspector armed and instructed, and commanding all the Yards. By

* Or would not 12 foot be deemed necessary? since one man might mount on the shoulders, and perhaps for a moment on the head of another.

a bell he summons to his assistance at any time the whole collected force of the Prison.

8. *To what use the Protection-Wall, and the Protection-Road?*—The use is tolerably well indicated by the name. Behind the Wall, and in the Road, in case of an attack by a riotous mob upon the Gates, as many passengers as do not choose to take part in it will find shelter: and the attack may be opposed with fire-arms from the building with the less scruple, as no one can suffer from it whose guilt has not made him the author of his own fate.

And would you wish then to see a perhaps well-meaning tho' culpable multitude devoted in heaps to slaughter?—No surely: though better thus than that the Prison should be destroyed, the Prisoners turned loose upon society, and justice struck with impotence. But the truth is, that nothing of this sort will happen: the more plainly impracticable you make the enterprize, the surer you may be that it will never be attempted. Prevention is the work of humanity. Cruelty joins with improvidence in making the instruments of justice of such apparent weakness as to hold out invitation to a destroying hand.

This is perhaps the first plan of defence against rioters, of which the protection of the peaceable

passenger ever made a part: the first in which the discrimination of the innocent from the guilty was ever provided for or thought of.

In the instance of every prison—of every public building as yet existing—an attack once begun, what is the consequence? The guilty must be suffered to perpetrate without controul their forbidden enterprize, or a continual risk incurred of involving the innocent in their fate. What is the effect of street-firing?—A medley massacre of rioters and passengers, of guilty and innocent, of men, women, and children.

The *maximum* of economy with regard to the figure of the ground, and thence of its surrounding Fences, remains yet to be suggested: and situations may be conceived, in which it would not be irreconcilable with convenience. The quadrangular figure is that which will naturally have first presented itself. But three lines are enough to enclose a space. The ground *may* therefore be *triangular*: nor, if regularity, and beauty in as far as it depends upon regularity, are disregarded, is it necessary that of this triangle any two sides should be equal. An equal legged-triangle with the legs longer than the base, is to be preferred to an equilateral triangle, much more to a triangle having the

the angle opposite the base equal to or greater than a right one. The reason is, that the figure may have a space running out in length, in order to afford a sufficient length of avenue: the point or apex being cut off, in order to form the entrance.

The number of the Centinels too, if the military plan of guarding be approved of, and if the difference in point of number be an object, will in this way be reduced from four to three.

With or without a guard, the Inspection-principle, seconded by other assistances, we have seen, or shall see, relative to the plan of management, supercedes the necessity without detracting any thing from the ingenuity, of Mr. Blackburne's expensive system of moral fortification. *If a man gets to the other side of the wall* (said he to me one day as he has said to others) *it must be by getting either through, or under, or over it. To prevent his getting through, I make it of stone, and of stones too massy to be displaced, as bricks may be, by picking. To prevent his getting under, I make a drain. As he undermines, no sooner is he got within the Arch than out flows the water and spoils his mine.*—To prevent his getting over there was a system of precautions one under another too long to be repeated here.—Sound logic was here combined

combined with admirable ingenuity: in all this there might be nothing which on certain supposition might not be necessary. What is that supposition?—that in some cases a number of Prisoners, in others at least one Prisoner, have time almost without stint to carry on their operations unobserved. In all other modes of construction, under all other systems of prison-management, the supposition speaks the truth. But under the Panopticon mode of construction, under the plan of management which it supposes and provides for, is this the case?—exactly the reverse. What Prisoner carries on plans of escape under a Keeper's eye?

In a dark night, it may be said, the benefit of the Inspection-principle fails you.—Yes, if there be no lamps sufficient to light the wall:—Yes, if there be no *Watchman* patrolling in the house. The question then lies between the expence of this system of complicated circumvallation, and the expence of lighting, or rather the expence of providing a single watchman to go the rounds. I say that a watchman will be sufficient security without even lighting on purpose, and that in an establishment like this a watchman need cost nothing: since the people necessary for guarding and instructing by day, will be sufficient to watch at night by turns. Even in the darkest night and without artificial light, can

a Prisoner without tools, at no more than 25 foot distance from the watchman, first force through the glass of a window, and then through iron bars on the other side? Will he hazard any such attempt, when supposing him against all probability to succeed, there is still a wall of 13 foot high for him to climb (I mean that which bounds the Exterior Well) and beyond that another?

To get clear altogether of the obstruction afforded by walls to ventilation, it has been proposed* to dig a ditch, and to set down the wall at the bottom of the ditch. The expedient seems unnecessary, the expence of it considerable, and the inconvenience material and unavoidable.

The inconvenience is that whatsoever it may do with regard to security, it gives up seclusion. Of what breadth must your ditch be?—A hundred, two hundred foot would not preclude converse with the car: nor four hundred foot, nor a thousand, with the eye. The grounds all round would be a continual rendezvous for the associates and confederates of the Prisoners: that is, for all sorts of malefactors. It would be a continual scene of plans of mischief, and plots for escape. What should hinder a man on the outside from tossing

* By the late Dr. Jebb, in a pamphlet written on purpose.

over a rope or a rope-ladder to a Prisoner prepared to receive it? What should hinder twenty men from doing the same thing at the same time?

How is the ditch to be constructed? If the sides are perpendicular, they must be supported by brick-work, or the earth will be continually washing and crumbling in, till it reduces the depth of your ditch, and consequently the height of your wall, to nothing.—Are they to be thus supported?—Then besides the expence of an enormous ditch, you have that of three Walls instead of one.—Are they to be sloping without brick-work? The width of this enormous ditch must then be enormously encreased, and still the obnoxious effect will be gradually produced. By the Prisoners at least on their side, every thing will be done, that can be done, to accelerate it. Among their friends too on the outside, to contribute a stone or an handful of earth will be a pious work.

At any rate you have on each side a receptacle for stagnant water.—Which would be the greater? the service done to health by the sinking of the wall, or the detriment, by the accumulation of this water?

It would be incompatible with the mode of guarding above proposed, by Centinels inclosed in inaccessible lanes: unless stationed at such distances

as would occasion an enormous addition to the length of their walks, and to the quantity of ground consumed. For it would be altogether ineligible to bring the guards so near as to possess an easy intercourse with the Prisoners

Were it indeed worth while, the advantage in point of ventilation expected from this idea, might be obtained by a partial adoption of it, with the help of one of the precautions already indicated. It would not be necessary to lay the space open all round: it would be sufficient were it laid open at one end, and that end might be narrowed in the manner of the Approach as above described. But at that end the property of the ground on the other side to a very considerable distance would require to be attached to the establishment: in such manner that no stranger should have it in his power to approach near enough to hold any sort of converse either with the Prisoners, or even with the Centinel; whose path must also be at such a distance from the nearest spot to which they can approach, as to prevent all converse between him and them, in a voice too loud to escape the ear of the Inspector in the Look-out.*

* Prisons are not by any means the only buildings to which this mode of exterior fortification, if it be doing justice to a precaution

caution so simple and unexpensive to stile it by so formidable a name, might be applicable with advantage.

With a view to *inspection*, it might be applied to all such public establishments as on account of their destination, of their importance, their magnitude, and their destructibility, are particularly exposed to the clandestine enterprizes of foreign emissaries: such as public magazines and Dock-yards. The Approach should be so constructed, and the officers' houses and stations so disposed, that every strange face should have the gauntelope to run as it were through all their eyes, and that any instance of negligence on this head on the part of any one of them, should be exposed to the observation of all the rest. Had a plan like this been pursued in Plymouth Rope-yard, the sad destruction to which that important magazine was devoted in 1776 by the hands of a wretched incendiary, might perhaps never have had place.

With a view to *defence against open hostility*, it might be applied not only to every prison, but to every other building, public or private, which by the provocation it holds out to rapacity or popular antipathy, is liable to become the object of lawless violence. A Money-bank, a great Corn-magazine, a place of worship belonging to any obnoxious sect, a new erected machine which appears to threaten a sudden reduction in the price or the demand of any kind of labour—may afford so many examples. With these precautions Dingley's Saw-mill, for instance, for which the nation was charged with so heavy an indemnity, would probably have escaped.

I speak not here of the mode of guarding by Centinels: a species of protection which could only be afforded to public establishments, and to such establishments as were of adequate importance. I speak only of the mode of constructing the Approach:—its *unity*—its situation in a walled recess—that recess as deep as the
ground

ground will allow—contracted at the entrance—and commanded by as many officers' houses and stations as can be brought to bear upon it—Gates of open-work—and on the other side of the road a Protection-Road—covered by a Protection-Wall—all other roads, besides that which the Approach opens to, kept at a distance.

§ 22.

MEANS OF SUPPLYING WATER

TWO sources of supply present themselves: the rain-water collected on the roof: and common water, such as the situation furnishes, to be forced up by the labour of the Prisoners in the Airing-wheels.

The first supply is not a constant one, and will go but little way towards answering the exigencies of so numerous an inhabitancy. It must however be carried off at any rate: and any one of the 8 iron tubes that form the supports of the Inspection-Tower, will afford a channel adequate to the purpose. Branches from this main would serve to convey the water to reservoirs in or near to the Kitchen and the Laundry on the sunken floor.

The only combustible parts of the building, or rather the only parts of the building affording a few combustible materials, will be the Inspection-Lodge, the Inspection-Galleries and the Chapel-Galleries. By way of provision against such accidents, a *fire-engine* should be kept in a place contiguous to the Central-Area, with pipes communicating

communicating either with the reservoirs above-mentioned, or with the more copious and certain ones, which supply the water that is forced up by the wheels.

To receive *this* water an annular cistern runs all round the building. It is placed immediately under the roof, and within the outer wall. The wall affords it support: the roof, a covering from dust and any other matters that might foul the water. Under it run down in a perpendicular direction to the bottom of the building, at the places where the partition walls join the outer wall, piles of iron pipes serving as mains, one placed between, and serving for, every two piles of Cells. From each of these mains run 12 short branches with a cock to each, one to each of the twelve Cells. Of these mains, which for 19 Cells on a story cannot be fewer than 10, supposing none to be wanting for the Dead-part, two, by the help of so many branches running over and across the Exterior Area, will serve likewise for conveying the water up by the pumps worked by the wheels.*

Shall the whole supply of water be carried up to the top of the building? or shall the quantity re-

* To adapt them to this double purpose will require some little contrivance; but too obvious to need particularizing.

quired for each story of Cells be carried no higher than is necessary to convey it to those Cells?—The latter arrangement would save labour, but it seems questionable whether upon the whole it would be the most economical one. Instead of one cistern it would require six; each of which must have its supports running round the building: and though each would require but one sixth part of the capacity of the general cistern, it would require almost as much workmanship, and much more than one sixth, perhaps as much as $\frac{1}{2}$, of the materials.* To form a precise statement of the comparative economy of the two plans, compute the value of labour saved by that which gives six particular cisterns, and set against it the probable annual average of the extra repairs, added to the interest of the extra-capital which it would require.† But a more simple, and what seems to be a decisive consideration, is the insecurity that would result from these annular cisterns running round on the outside, one under every story but the lowest. They would be so many ladders to climb down by: from whence would

* I say six: for if it did not answer to have so many as six, by the same rule it would not answer to have any more than one.

† There would besides be the expence of the bringing so many pipes through the outer wall of the building.

also result the necessity of the further expence of having strong bars to those stories of Cells to which upon the present plan, as already observed, no such guards are necessary.

As to the particular mode of conveying the water to the cistern, it is a topic I pass over, as bearing no relation to the particular construction or destination of the present building: with only this remark, that, as the height is more than double that to which water can be raised by the pressure of the atmosphere, some other sort of pump than the common lifting one must be employed. Forcing pumps I observe employed in the New St. Luke's Hospital, and proposed by Mr. Howard in his plan of a Penitentiary-House.

 § 23. *OF THE MODE*

OF

WARMING THE BUILDING.

THE possible differences in the mode of applying artificial heat to a building by means of culinary fire may be comprised in the following short analysis. It may be either *open* or *close*: if *close*, either *unventilative* or *ventilative*. The open, in which the fuel is burnt on hearths or in grates, with or without the benefit of a chimney, is that most in use in our three kingdoms. The unventilative is exemplified in the Dutch, Russian and Swedish stoves: and in England in those used for hot-houses, and in those used in dwelling-houses and other buildings under the name of Buzaglo, who first brought them in vogue: the ventilative, in the stoves called Dr. Franklin's or the Pennsylvania stoves, and in those for which Messrs. Moser and Jackson* have enjoyed a patent for some years.

* Ironmongers in Frith-street Soho.

The common or open mode is what, on account of the expence, nothing but absolute necessity would justify the employment of in a Prison. Expence of chimneys, grates, and other fire implements; expence of fuel, and of the time employed in conveying it; these expences must be multiplied by the whole number of Cells: for whatever need there is of it for any one, the same is there for every other. Even the mischief that might be done by fire, through design or carelessness, secure as a building thus constructed is from such mischief in comparison of an ordinary house, is not altogether to be neglected.

The second or unventilative method, besides its being far from a pleasant one to those who are not accustomed to it, is by no means exempt from the suspicion of being unfavourable to health. The heat subsists undiminished, no otherwise than in as far as the air in the room remains unchanged: calcination depends upon the want of ventilation. The air will not be as warm as is desired at a certain distance from the heated stove, without being much hotter than is desired in the vicinity of it: between the two regions are so many concentric strata, in one or another of which every sort of putrescible substance will find the state of things

the most favourable to the prevalence of that noisome and unhealthy fermentation. The breath and other animal effluvia, while they are putrifying in one part of the room may be burning in another. The unchanged and unchangeable air is corrupted, the lungs, the olfactory nerves and the stomach are assailed, in all manner of ways at once: by emphysema, by putridity and by respiration.*

In the different modes of producing these noisome effects there are degrees of noisomeness: an iron stove is worse than an earthen one: it contracts a greater degree of heat: and the vapour produced by the solution of a metal in burnt animal or vegetable oil, is an additional nuisance over and above what an unmetallic earth will produce.

* Get the stove heated upon your entrance into a German inn, in about half an hour you perceive an abominable stink: in another half hour a slight degree of warmth: in a third the heat begins to be comfortable, in a fourth it is become suffocating. Open a door or window for relief, in rushes the air in partial gusts, and gives you cold.

In hot-houses, though the unpleasant effects of this mode of warming are perceptible to many people, they are however less so than in common dwelling-rooms; hot-houses being so much less inhabited by animals whose only effect on the air is to taint it, than by vegetables, which howsoever they may vitiate it in certain ways, are found to purify as well as sweeten it in others.

Over

Over these impure methods of obtaining heat, the *ventilative* is capable of possessing a great advantage. The air which is to receive the heat being continually renewed, may be brought from the pure atmosphere without; and instead of being stagnant, flows in in a perpetually changing stream. Instead of burning in one part while it is freezing in another, the air of the room is thus rendered throughout of the same temperature. A succession of cold air from without is the less necessary, as the warm air, what there is of it, is not less pure:* and this pure though heated air, if introduced, as it ought to be, from the lower part of the room helps to drive up before it, to that part of the room which is above the level of the respiration, that part of the air which by having been breathed already, has been rendered the less fit for breathing.

By the Pennsylvanian stoves these advantages were however possessed in but an imperfect degree.—Why?—Because the *warming-chamber* was a metallic one: it was of iron. By

* It is suggested to me by Dr. Fordyce, that in such a building matters might be contrived so that scarce any air should enter any where that had not passed through the *warming-chamber*. I make use of that word to express the receptacle through which the air is to be made to pass in order to receive the heat.

partitions made between an iron back to the grate and another such back or the brickwork behind, the air was made to pass through a long though tortuous channel of that metal in a too highly heated state.

In the room of the metal substitute a pure and unmetallic earth, the mischief has no place.

The misfortune is, that by means of earth alone, the operation has not hitherto been found practicable, unless perhaps it be upon a large scale. In iron, your warming-chamber may be very thin, is soon heated, and is not liable to be put out of order by the heat. In earth, that receptacle if thick, that is of the thickness that must be given to it if made of bricks, is a long while in heating, a great deal of the heat is absorbed and lost in it, it gives out its heat with difficulty to the air, which, before it has had time to take up a sufficiency of the heat is passed through and gone:* add to which, that in joining the bricks mortar must be used, and this mortar will be liable to shrink and crack by the heat and lose its hold. On the other hand, if the

* Could not the means be found of detaining the air with advantage till it had imbibed a sufficient degree of heat, for instance by a pair of valves?—This is one of many points that might require to be considered.

earth be thin, as in retorts and crucibles, it will be liable to break by accidental violence, or crack by change of temperature: and at any rate it will not receive the heat from the fuel, or communicate it to the air, so soon as metal would.

The warming chamber, or set of warming-chambers employed by the artists above mentioned, is calculated to obviate both those inconveniences. It consists of earthen retorts, open at both ends, and inclosed in iron ones. The air which is to be heated passes through the interior earthen vessel without coming in contact any where with the exterior iron one. The iron retort being that which alone is exposed to the immediate action of the fire, defends from accidents the earthen one within. The earthen one, being the only one of the two that is in contact with the air, defends that element from the contaminating influence of the heated metal on the outside.

The ventilative plan, modified in such manner as to avoid the use of iron for the inside of the warming-chamber, at least of iron in a too highly heated state, being determined upon, the question is how to apply it in such a building to the most advantage?

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The first expedient that occurs is the making of what use can be made of the fires employed for the preparation of the food. From this source any quantity of heat might doubtless be obtained: but whether in such a situation it could be obtained to any considerable amount upon advantageous terms, seems rather disputable. In ordinary kitchens a good deal is produced, more or less of which might be employed perhaps in this way to more advantage than it is in common. But in a building of this form and designed for such inhabitants, if the heat employed in the preparation of the food were disposed of to that purpose to the best advantage, the quantity that would remain applicable to any other purpose would, I believe, turn out to be but inconsiderable. That it would not be always sufficient for that of the warming of such a building I am altogether confident.*

* The most economical mode of dressing food by culinary fire is either *baking* or *boiling*. Baking, if performed upon the most economical plan, might be conducted in such a manner as not to afford any heat at all applicable to any other purpose, as will be seen below. The most economical mode of boiling is in what are commonly called *coppers*, because commonly made of that material, vessels bedded in brick-work with a place for fuel underneath, closed by a door which is never opened but for the

The deficiency must at any rate be made up by stoves to be provided on purpose. In this view the

the introduction of the fuel. In this way a small proportion of fuel comparatively speaking serves, scarce any of the heat being discharged into the room.

On the common plans the door consists of a single iron plate. It might be made double: consisting of two parallel plates, an inch or so asunder with a bottom between: the interval might be filled up with sand, or some other pure earth that is a worse conductor of heat, if any such there be. The heat would thus be the better kept in, and the outer partition of the door might be made to receive so little of it as not to contribute in the smallest degree to the contamination of the air.

The heat contained in the steam raised by the boiling, should not be suffered, as in private kitchens, to escape in waste. It should be collected and applied by tubes issuing from the covers of the coppers, after the manner of a *retort* or *still head*. In proportion to the quantity of the provision that could thus be dressed by steam, would be the quantity of heat that would be saved. The steam vessels would be ranged in front of the boiling vessels, upon an elevation somewhat higher. The boiling vessels, in order to catch as much of the current of fire as possible in its way to the chimney back, should extend as far back as was consistent with convenience. Hence too another advantage: they would have the more surface, and the more surface the more steam they would yield to the steam vessels, with a given quantity of heat in a given time. The better to confine the heat, it might be worth while *perhaps* * to make the steam vessels, as also the covers and necks

* Dr. Fordyce from experience, says *certainly*.

fort fold by the ingenious artists above-mentioned present themselves as the most eligible yet known.

of the boilers double, with a lining of some badly conducting substance, such as flannel or feathers, between the parallel plates.

The following fact, communicated by an intelligent and reverend friend, will help to shew how far any attention that can be paid to the confinement of heat is from being a trivial one.

In the parish of P——, in the county of W——, live two bakers, T. W. and T. R.—T. R.'s oven is better protected than that of T. W.: that is, so situated and circumstanced, that whatever heat is introduced into it is better confined within it, less drawn off from it by surrounding bodies. Observe the consequence.—To bake the same quantity of bread takes upwards of three times the quantity of fuel in the badly protected oven that it does in the other.

The following are the data in the precise state in which they were given: from whence the accuracy of the calculation may be judged of.

In T. W.'s oven (the badly protected one) it takes 15 pennyworth of wood to bake 40 gallon loaves.

In T. R.'s, it takes but 8 pennyworth of wood (4 faggots at 2d. each) to bake 50 gallon loaves; and when he bakes a second time the same day, it takes but half the quantity.

In a vessel consisting chiefly of iron, weighing upwards of a ton, contrived for the purpose of hatching eggs, Dr. Fordyce many years ago produced by a single lamp of the smallest kind in use, and communicated to the iron, a permanent degree of heat equal to that of boiling water. In the same vessel, by the same means, he produced an addition of heat to the amount of 60 degrees, raising the temperature from 40 to 100 in a large space in which a constant current of air was pervading every part. The use of
feathers

What then is the degree of artificial heat which the whole of the apparatus employed should be capable of maintaining?—What size and number of stoves would be necessary to insure it?—From whence ought the air to be taken into the warming-chamber?—Whereabouts to be discharged from it?—How to be made to visit every Cell?

As to the number of degrees of extra heat which the apparatus should be capable of affording, it should hardly be less than 40 of Fahrenheit's scale. Forty added to 32, the degree at the freezing point, would make 72, 17 degrees above the height commonly marked *temperate*. But in time of frost the heat is commonly more or less below the freezing point: one instance I remember of its being so much lower as 46 degrees: 14 below 0. This, it is true, was for a few hours only, and that in the open air, and in a situation particularly exposed. And in a building where the kitchen fires might at any rate afford something, and the

feathers, supposed to be the worst conductors of heat existing, was the contrivance on which the production of those effects principally depended. Suppose the knowledge thus gained applied to the purpose of dressing the food in the manner of an oven, what would be the surplus of heat applicable to the purpose of warming the building?—None.

warmth

warmth of so many bodies, added to that of so many lights, would afford something more, and where the thickness of the walls would afford so much protection against sudden vicissitudes, no such very extraordinary deficiencies seem probable enough to be worth providing for. My learned adviser above-mentioned thinks I may venture to set down the lowest degree to be apprehended as 25. Forty added to this makes 65, 10 degrees above the temperate point. This may be more than will ever be necessary. But in a permanent provision, some allowance should be made for accidents, and in a business of such uncertainty, still more for miscalculation. Officers, it is to be remembered, not less than prisoners, must be kept in view. Should necessity be the only object to be provided for in the one case, comfort and custom must be attended to in the other. Happily for the least-regarded class, in a building of this form to be warmed in this manner, very little distinction in regard to this important branch of comfort can be made.

As to the number and size, the seven supports (one of the eight being made use of as a water-pipe) afford so many chimneys, each of which is capable of receiving its stove. But how many out
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of the seven would be necessary, and those of what size? Experience would determine: but as a provision must be made in the construction of the building antecedent to any experience that can be obtained in the building itself, *data* collected from experience of other buildings must be looked out for. Such *data* are not altogether wanting. A single stove of Moser and Jackson's construction, being employed in St. George's Church Bloomsbury, raised the heat *eleven* degrees of Fahrenheit's scale, and it did not appear that it was able to raise it any more. To produce in that Church 40 degrees of extra heat, the number above fixed upon for our prison, it would therefore require *four* such stoves. What follows?—That to ascertain *a priori* from the above *datum* as well as may be the size and number of stoves of the same construction necessary for our building, three other *data* would be necessary: the dimensions of the above stove: the dimensions of the inside of that Church, and the dimensions of the inside of the Panopticon proposed: noting withall that the quantity of glass in the central Sky-light, in the Annular Sky-light, and in the Cell Windows, added to the number of the Partition Walls between Cell and Cell, would probably lay the Panopticon
under

under some little disadvantage in comparison with that Church.

In the above manner some conjecture may be formed relative to the total quantity of calefactive power that would probably be requisite: I mean of the sum of the contents of the warming-chamber, in whatever manner they may be disposed.

But when the sum total of the contents is fixed upon, the number and relative size of the several warming-chambers is not a matter of indifference. Equality of distribution requires that the number should be as great as possible, and the capacities of the several warming-chambers equal. Eight supports, that is eight chimneys to the twenty-four piles of Cells, would give a stove to every three piles of Cells. The Dead-part occupying the space of five piles of Cells, the middle one of the three supports that look to the Dead-part would be the proper one to give up, and make use of as a water-pipe: the seven others would afford seven stoves among nineteen piles of Cells *.

* Total capacity out of the question, the mere number would not raise the price to more than $24\frac{1}{2}$ guineas: the price of one of the least size sold by Moser and Jackson being no more than $3\frac{1}{2}$ guineas; but the quantity of calefactive power obtainable from

Will the distribution thus made be sufficiently minute? Experience alone can decide with certainty. Of the three piles of Cells corresponding to each stove, the middle one, if there were any difference, should receive more heat than the other two. But this difference I should expect to find little or nothing, and if it were but small, it would be rather a convenience than otherwise: varieties of temperature might thus be adjusted to differences with regard to employment, health, constitution and good behaviour.

At its exit from the Warming-chamber, shall the heated air be suffered to take its own course, or shall it meet with a tube to conduct it to the part at which it begins to be of use? This too would be matter of experiment, and the experiment might be performed without any considerable expence. Terminating in the nearest part of the Intermediate Well, each tube would require about 14 foot in length. For the materials, the worst conductors of heat that would not be too expensive should be selected: a square pipe of four thin

seven small stoves would probably go but a little way towards furnishing 40 degrees of heat to such a building.

boards of that length, each four or five inches over. These might be covered with a case of loose cloth of the texture of the warmest blanketing: which, to keep off the dust, and contribute still more to the confinement of the heat, might be enclosed in a similar tube. If by the help of these *radial* tubes the distribution were not found equal enough, they might be made to terminate in a *circumferential* one of similar materials: the whole of the *channel of communication* or *discharging duct*, as it might be called, would thus represent the exterior part of a wheel, composed of hollow spokes terminating in a hollow felly. The felly thus constituted should be pierced at equal and frequent intervals with equal apertures, the sum of which should be equal, and no more than equal,* to the sum of the apertures of the radial tubes.

Why these radial tubes? Since, as far as they extended, they would prevent the horizontal distribution of the heat, and, though composed of such materials as to absorb as little of it as possible, they would at any rate absorb some.—For this reason:

* If greater, the heated air might be discharged at the nearest part of the circumferential tube before it had attained the most remote.

that

that without them a great part of the air, indeed the greatest, by mounting directly to the ceiling of the sunken story, would be already 4 or 5 foot above the floor of the lowest story of the Cells: and the ceiling, as well by the nature of its materials as by its relative extent of surface, would absorb beyond comparison more of the heat than would be absorbed by the tubes.

The *horizontal* distribution of the heated air being thus provided for, *how to provide for its distribution on a perpendicular direction* among the six stories of Cells in the same pile? For if no particular provision were made, the natural tendency of the heated air being to make its way out by the shortest passage, the greater part of it would mount up perpendicularly to the sky-light, where it would necessarily find chinks at which it would make its exit, without ever having visited the Cells.

To prevent this aberration, and to insure a regular draught through every Cell, I insert a chain of tubes reaching from bottom to top, but with regular interruptions.* In the floor of each Cell of

* For the general idea of a set of perforations for this purpose, and a view of the necessity of employing them, I am indebted to the obliging suggestion of Dr. Fordyce.

the lowest story of Cells, close to the front wall, at an equal distance from the two side-walls, and consequently at the crown of the arch, I leave a round hole, say 4 inches in diameter, passing through the brick-work into the sunken story below. To this hole I adapt a hollow tube of thin cast iron, of the same diameter. This tube is continued in height to within a few inches of the ceiling above; which brings it to between 8 and 9 foot in length. Arrived at that height, it terminates in a horizontal mouth, which may be closed by a sort of grating, transformable at pleasure into an unperforated plate.* Between this mouth and the lower end of the tube is a wire grating, to prevent correspondence by papers. Immediately over this tube, is the open end of a similar tube with an expanding aperture, flush with the ceiling, and consequently at a few inches distance from the

* A neat contrivance for this purpose is employed by Messrs. Moser and Jackson. Out of a circular plate of brass, spaces are cut in the form of *radii*, equal in dimensions to the quantity left. Under the metallic star thus formed, a similar one is stowed, connected with the upper one by a pivot on which it turns. On giving a slight turn to the under star, it moves from under the upper one by which it was covered before, fills up the interstices, and the aperture is compleatly and exactly closed.

mouth

mouth of the first mentioned tube, partly for the purpose of inviting the current that way in the same manner, partly for the sake of conveying the breathed air of that lowermost Cell into the upper region of the next above it: and so all the way up.

The uppermost of all this chain of tubes runs through the roof; and opens immediately above. It may be there covered with an horizontal valve, the weight of which will be sufficient to close it, and exclude the colder air on the outside. When lifted up by the stream of heated air from within, the efflux of that air will be sufficient to prevent the influx of the colder one from without.

Why, instead of a simple hole in the brick-work, a tube, and that running to such a height?—For two reasons: that it may not afford a means of secret converse between the Cells: and that the air which has been breathed in the Cell below may not be conveyed to any part, in which it would be liable to be breathed again, of the Cell above: it is accordingly discharged as high as possible above the level of the organs of respiration.

Should the precaution be deemed necessary, a few slight bars might be disposed in such a manner as

to prevent a prisoner from introducing his head or ear, near enough to the mouth of the tube to gain an opportunity of converse. But frugality forbids the being at the expence of these bars, before experience had shewn the need of them. The probability is that no such need would ever occur: since a man could not make use of the aperture of the tube for speaking without mounting upon something, nor mount upon any thing for that purpose without subjecting himself to a great chance of being observed. Nor then would it avail him any thing, unless the person to whom he addressed himself in the Cell above or underneath, were elevated and occupied in the same manner at the same time, which without doubling the chance of detection could not be. Add to which, that if there be more than one in either Cell, they too must be privy to the intercourse: and in a situation like this, privacy without disclosure may in justice, and ought in policy, to be put in respect of punishment, upon a footing with complicity.

The level at which the warmed air was discharged could not be too low: the only spot in which there can be a certainty of placing it without inconvenience is the floor of the Intermediate Area
and

and the space under the Lodge. Thus situated, the tube would not be above 7 or 8 feet below the level of the floor of the lowermost story of the Cells which are to be warmed by it. If it were in the ceiling, it would be already 3 or 4 feet above them, and before it could cross the Intermediate Well, would have been carried still higher. If it were any where between the floor and ceiling, it would be in the way, and stop the passage, unless it were considerably higher than a man's head, and then it would require pillars here and there to support it. To sink it to that level, either the stoves themselves might be sunk down accordingly, or a *perpendicular* tube might drop from the warming-chamber to join the *radical* tube. The former expedient seems the most economical and the most simple.*

It might perhaps be no bad economy to have a sort of *curtain* for the Annular Sky-light, to cover

* True it is, that though the air when heated will not naturally descend, yet sudden gusts may carry it even in that direction, besides that the heat of every stratum of air will of itself in a certain degree be communicated to every stratum of air that is contiguous. But these are assistances too inconsiderable to be adequate to the purpose. They would still leave a great disparity between the temperature of the lowest story and those above it.

it as soon as the lights are lit in cold weather. When not used it might be kept coiled up on rollers, at the upper part of the sky-light, that is, at the part where it joins the roof of the Inspection-tower, and from thence drawn down over and across the Annular Well, and fastened by rings to ranges of hooks inserted a little above the interior windows of the chambers over the Cells. It might be of the thickness and texture of the warmest sort of blanketing. It would be assistant to warmth, not only by keeping the air from impinging against the glass of the sky-light, and there discharging its heat, but likewise by stopping the current and directing it towards the Cells. The sky-light, it should be observed, must unavoidably be secured by innumerable crevices, one between every two panes: for in that situation, in order to prevent their cracking by the vicissitudes of temperature, the panes instead of being fixed in the frame and the crevices stopped with putty, must be placed so as to lap over one another, without any thing to close the chinks.

Provision remains yet to be made for the Lodge. This might be effected by a small tube running from each of the stoves. It need be but a small one:

one: for the warmth yielded by the supports themselves through which the smoke is passing, cannot but be considerable. Not improbably it would be sufficient. If upon trial it should prove otherwise, it would be easy to add the tubes. To distribute the heat the better and assist the ventilation, they should open at the circumference of the room, but just above the floor, alternating with the chimneys. The air, as fast as it was heated by the chimneys or by respiration, would, together with the heated air from the tubes, make its way out at the central aperture. There would be no danger either of phlogistication from the iron or want of ventilation. The utmost heat which the smoke could impart to the chimneys would not be considerable enough to produce the former inconvenience, and the Central Aperture is a sufficient security against the latter.

Were it not for the distance there is between the spot where the air receives its heat and the apartments for which it is wanted, it is evident the *discharging-ducts* could not be too short: since the more extensive they are, the more of the heat they absorb.

As

As to the Inspection-Galleries, being immediately over the spot at which the discharge of the heated air is effected, they can be at no loss for a supply. It is but leaving here and there in the floor an aperture capable of being closed at pleasure. Indeed it matters not how thin the floors of those Galleries are: if of mere boards, the mere crevices might answer the purpose.

From whence shall the air be admitted into the warming chambers of the stoves? From the entrance, by an admission-duct, a sort of an *aeriduct*, if the term may be allowed, appropriated to the purpose. In general this is a point very little attended to. Air of some sort or other will be found every where, and any sort it is thought, may serve. Air already within the building might even be taken in preference: since by the stay it has made there it has already acquired some heat. But if the dependence is on what draws in through doors and crevices, there can be no air any further than in proportion as there is an influx of cold air at all those inlets. The cold air that comes in at the crevices will in most instances find its way to the bodies of those whom it is intended to keep warm: that which comes in at the doors will in every

every instance. But if a supply adequate to the evacuation kept up by respiration and other causes, is introduced through the Warming-chambers, no such influx of cold air will take place.

This ariduct then will be nothing but a flue similar to those employed for conveyance of the smoke in hot-houses. Short tubes of iron, will serve for its junction with the Warming-chambers. The quantity thus drawn in can scarcely be insufficient for respiration ;* if it were, the deficiency might be made up by tubes discharging the cold air at a height above the heads of the inhabitants, and pointing upwards.†

* The quantity thus requisite is easily ascertained. The quantity of fresh air necessary to support a man without inconvenience for a given time has been pretty well determined. This quantity, multiplied by the greatest number of inhabitants the building can ever inclose at the same time, would give the quantity of fresh air requisite for the supply of the building during that time.

† Another use, which though collateral to the above design, is not the least considerable of the advantages that might be reaped from it, is the opportunity it would afford of a set of experiments relative to the economy of heat. With the least quantity and expence of fuel possible how to produce and support for a given time a given degree of heat, applicable to the several purposes for which heat is required ? Such is the problem to be solved : a subject which has never yet been taken up upon principles, or
upon

The Penitentiary-Act puts an inexorable negative upon all this contrivance. According to that

upon a large scale. Of what importance the solution of such a problem would be to the population and wealth of nations may be seen at a single glance. Fuel of the fossil kind is a limited resource: the nation which consumes it lives upon a capital which must sooner or later be exhausted. The population of a country in which artificial heat is a necessary of life must therefore ultimately depend upon the quantity it can keep up of such sort of fuel as can be obtained from the vegetable kingdom, the only sort which is capable of being regularly reproduced.

The facilities which a building upon the Panopticon principle would afford for experiments in this view will readily be apprehended. In the seven stoves, which without putting more than one to each chimney it admits of, trial might be made of so many different forms. The *ventilative* mode would of course be taken for the common basis: but this ground-work is susceptible of a great variety of modifications. The construction pursued by Messrs. Moser and Jackson, with all its superiority over all preceding methods, may yet be found to fall considerably short of perfection in this line. Doubling the Warming-chamber occasions a great consumption of fuel, and renders this mode of warming far from being so cheap as could be wished. Could not the same degree of extra heat be given to a building by a less degree of ignition given to a larger quantity of air? For, as Dr. Fordyce has clearly demonstrated to me, the less the degree of heat which the air contracts in the warming-chamber the better, for very material reasons. Reducing the degree of heat given to the air by augmenting the quantity of air to which heat is given, could not there be found some single substance of which a Warming-chamber

And all Penitentiary-houses must absolutely be warmed, “dried and moderately warmed

chamber might be made, without the addition of another receptacle to line or to enclose it? Is it most advantageous to make the warming-chamber *divided* into partitions, as practised by Moser and Jackson, or *entire*? and if entire, to what extent can such a Warming-chamber be carried to advantage? What is the most advantageous form for the Warming-chamber, and what the most advantageous mode of applying the fire to it, and connecting it with the fireplace? The relation being ascertained between a degree of heat as indicated by the thermometer on the one hand, and the expansive force on the other, and thence the velocity of current, and quantity of air so heated discharged out of a mouth of known dimensions within a known time, could not a given degree of heat be secured at pleasure to the air thus discharged, by closing the mouth with a valve loaded by a weight, which would thus indicate and express by pounds and ounces the several degrees and quantities above mentioned, and consequently the calefactive powers of the stove? Such are among the questions which the enquiry would have in view. Hitherto, partly for want of science, partly for want of a proper theatre for experiment, whatever has been done by artists in this line has been little more than random guesswork. Means might not improbably be found, in some such way as above hinted at, of ascertaining *a priori*, I mean previously to any trial made in the particular building to be warmed, the calefactive power of a given stove, that is the quantity of air heated to a given degree which it is capable of yielding to that or any building within a given time. This indication being obtained, the several calefactive powers of different stoves might be compared while they were at work at the same time, whereas without

in damp or cold weather,"—"by flues," and these flues must come "from the flues in the kitchens" and other public fires belonging to each house.*

The invention of Messrs. Moser and Jackson, as well as all other inventions, past, present and to

it the comparison could no otherwise be made than by setting them to work in the same building at different times. The species and quantity of fuel employed in the different stoves, the temperature of the air in different parts of the building, and of the atmosphere without the building during the whole continuance of the experiments, these or other influencing or resulting circumstances would need to be carefully marked and registered. In the same way the comparative calefactive powers of different sorts of *fuel* might also be ascertained. I have already hinted at the enquiries that might be made relative to the application of the heat to baking, boiling, and other domestic operations: not to mention those which, like malting, brewing and distilling, are conducted upon a more extensive scale. Were a course of experiments to be carried on with any such views, on so new and so peculiarly favourable a theatre, it might be of use that the plan of operations should be made public before hand, that such lights and instructions as might be obtainable from the philosophical world, might be collected before the commencement of the course. Philosophy is never more worthily occupied than when affording her assistances to the economy of common life: benefits of which mankind in general are partakers, being thus superadded to whatever gratification is to be reaped from researches purely speculative. It is a vain and false philosophy which conceives its dignity to be debased by use.

* 19. G. 3. c. 74. § 33.

could

come, that make no use of flues, is here rejected, seven years before it was ever thought of. I must be allowed a word or two in behalf of these ingenious artists. I am a co-defendant with them: a partner in their guilt. The same statute which prohibits their mode of warming a Penitentiary-house, proscribes my mode of building one, and my mode of managing one, in almost every circumstance. What has the service been a gainer by this rigour? We shall see—Economy, I presume, and that alone, was the power that dictated it. Humanity, however peremptory she might be in her injunctions that felons should have warm bed-chambers, would not of herself have been thus particular about the mode.

On the kitchen fires, which are put foremost, seems to be the grand reliance: the other public fires seem rather to be thrown in as make weights.

That economy could draw much advantage from this source will not, I believe, seem very probable, to any one who may have cast an eye over one of the preceding pages. A Panopticon Penitentiary House is a *room*: this statute Penitentiary-House was to have been a *town* with streets in it. In the room this resource seemed to amount to little: what would

would it amount to in the town? I would as soon think of warming London by the fires of the tavern kitchens.

Thus then stands the economy of the contrivance. That the bed-chambers may be economically warmed by flues from kitchens, kitchens and kitchen-fires, and so forth, are to be multiplied till there are enough of them for the bed-chambers. Could the new invented stoves be employed on any terms under this act? By prescribing the one mode does it peremptorily proscribe the other? Would an indictment lie, or only a *mandamus*?—This is more than I would presume to answer. But what must be done at all events, or the positive injunctions of the law disobeyed, is—to build the kitchens. That done, and whatever degree of heat is necessary being produced in that way, whatever degree is not necessary, might perhaps be produceable in the most economical manner by the new invented stoves.

A little lower we shall see more of these culinary laws: but the virtue of the present one is not yet exhausted. To decide this as well as all other questions relative to the construction of the building, three superintendents are employed. Suppose the three (no very unnatural supposition) to have

have taken up each of them a different system about warming: one a patron of the ingenious artists above mentioned, another a disciple and partizan of Dr. Franklin's, the third an adorer of the memory of the departed sage to whom this statute is so much indebted, and an inexpugnable defender of the letter of the law. So many Superintendants, so many irreconcilable modes of warming the house. How would they agree?—As the three original Superintendants did about the place where it was to be put.

The error lies—not in regulating badly, but in regulating at all. Economy, household economy, is the child of the hour: it changes with prices, which change with the progress of ingenuity, the course of taxation, the copiousness of supply, the fluctuations of demand, and a thousand incidents besides. Meddling with matters like these, the legislator will probably be wrong to day, he will certainly be wrong to-morrow.

Were I obliged to make a law about heat, I would rather enact the degree than the mode of producing it. *In no Cell shall the heat ever be suffered to be fewer than such a number of degrees, nor more than such another number, above the freezing*

PART I. Q point

point in such or such a scale. Insure this degree, you whose business it is, as cheaply as you can.—Is the temperature thus fixed upon, a proper one? It will not be less so a thousand years hence. Minuteness might be objected, but not improvidence.

To what end this economy all the while?——that felons may have fires, or what is equivalent, in their bed-chambers. I say in their bed-chambers. For in these Cells they are to do nothing but “rest:”* this is carefully provided: other apartments are to be given them for working-rooms and dining-rooms.†—Fires in bed-chambers for felons? Is it every gentleman whose bed-chamber has a fire in it, or so much as a place to make one? In the coldest and dampest weather, is it altogether universal, even in the most opulent families, to have a fire to go to bed by?

And have not your felons then this luxury?—Yes—that they have: and glad I am they have it—Why?—because it costs nothing: they have no other rooms than their bed-chambers. Is it that they may have warm rooms to sleep in?—No: but that such of them as are employed in sedentary trades, may work and sit comfortably in the short

intervals of their work, instead of shivering in forced and comfortless inaction. By night as well as by day, they work as long as health and ease permit. They are not, like some we shall see hereafter, compelled to laziness beyond that of the laziest child of luxury, chained to their beds by law.

§ 24. *OF THE ECONOMY*

OBSERVED IN THE

CONSTRUCTION.

IT may be reduced to three principal heads: 1. Making the same apartment serve for every thing: 2. Making the Cells capable of serving for two, three, or four inhabitants instead of one: 3. Making them no larger than is necessary.

1. Six several modes of action or existence are incident to the persons for whose reception the building is particularly designed: *to work, to eat, to sleep, to pray, to be punished, and to be nursed.* One and the same place serves my prisoners for all of them. If the restriction is severe, it is not unexampled. In our own three kingdoms it is the lot of many hundred thousands, perhaps of some millions, of better men.

I see nothing that should hinder a man from working where he eats, working where he sleeps, eating where he works, eating where he sleeps, sleeping where he works, or sleeping where he eats. All this and more, it has more than once happened to myself to do in the same room for a considerable time together, and I cannot say I ever found any bad consequence from it.

I conceive it not altogether impossible for a man, nor even for a Christian to pray where he does all this: Christ and his Apostles did so. Synagogues excepted, neither Christ nor his Apostles knew what it was to pray in any consecrated place.

Not that for all this I have any objection to that site. It seems neither difficult to shew that it does service to religion, nor easy, if possible, to shew that it does disservice.

In my plan I accordingly admit a consecrated space, and that by no means a confined one: a place in which no operation that does not minister to religion shall be carried on. All I contend for is that it is not necessary that the Prisoners should themselves be situated in that place: that it is sufficient to every purpose if, without being situated there, they see and hear what passes there. The place where the Minister is situated, and where the more considerable part of the auditory are situated, the place to which the eyes and the thoughts of the Prisoners are turned, is holy ground.

As little reason do I see why the same place should not serve them for being punished in. Separate apartments for this purpose are surely of all luxuries one that can best be spared.*

* At Westminster School, two brothers once upon a time were caught straggling out of bounds. For their chastisement, their
father

As to nursing, whether upon the common plans of construction, separate rooms for that use were necessary, is not strictly to the purpose here. The bed-chambers being all single ones, I do not immediately apprehend what advantage the patients were to get by being removed out of those rooms into others, unless it were that of having fires in their rooms, a benefit which without shifting their quarters they might have received from portable stoves. A portable stove not only costs less than a room, but is sooner made. Were the Infirmary-rooms at any time to be filled, it would be rather an awkward circumstance for a patient in a high fever to wait for attendance till an additional Infirmary could be built and in readiness to receive him. At Moser and Jackson's, a good portable stove may be had upon the purest

father, a character not unknown in those days, caused two ferulas to be made on purpose. The sum of each culprit's transgression was inscribed upon the instrument of his punishment: and care was taken that in the correction of him who had strayed to St. John's, the ferula should not be employed which was destined to wipe out the guilt that had been contracted in Tothill-Fields. I remember the boys, the father, and the sticks. The mode of chastisement was, it must be confessed striking enough, but was it a necessary one? As necessary at least as it would have been to have built rooms to punish them in. And of the two contrivances, building a room, and engraving a couple of words upon the head of a stick, which is the most expensive?

principle for 3½ guineas ready made: stoves of inferior quality, and less elaborate contrivance, probably at a still cheaper rate.

But be this as it may in the Penitentiary-town designed by the Act, in a Panopticon Penitentiary-house, nursing rooms on purpose would be unnecessary beyond dispute. Rooms better adapted to that use than every Cell is of itself, or even so well, can hardly be shewn any where. By nursing-rooms on purpose I mean rooms, which when they are not put to this use are not put to any other. For as to particular Cells, more particularly well suited to the purpose of an *Infirmary*, than other Cells, such have already been pointed out, and under that very name:* but the convenience they would afford to the sick, is no reason why, when there are no sick, they should remain unoccupied. Indeed the whole of the upper story of Cells is peculiarly well adapted to this use. None of the air that has visited any one of these Cells ever visits any other part of the whole building: and being so much nearer than any others to the roof, they can receive a portable stove and its chimney, with so much the less inconvenience and expence.†

(21)

* § 6. *Dead part.*

† A separate Infirmary for a Panopticon Penitentiary-house? I would not desire such a thing even for the plague. Guarded by
proper

All these different sets of apartments the Penitentiary Act supposes—all but one, the dining-proper regulations, I should not have the smallest apprehension of inhabiting the Inspection-tower, while the Cells were filled by patients dying of that disease. How much less would there be to fear, where the only danger is a possibility of its importation by goods or passengers on account of the country from which they come? A LAZARETTO may accordingly be added to the number of the establishments to which the Panopticon principle might be applied, under some variations, to signal advantage. On casting an eye over the *Table of ends and means* at the end of this volume, the reader will easily distinguish such of the latter as are applicable to this purpose: he will also distinguish with equal facility such of the expedients as being adapted to opposite purposes would require to be discarded or changed. As to comfort, amusement, luxury in all its shapes, it is sufficient to hint that there is nothing of that sort that need be excluded from such an hotel any more than from any other. But every thing of luxury apart, what would not Howard have given for a Cell in a Panopticon Penitentiary-house as here described, instead of the apartment in the Venetian Lazaret, the stench of which had so nearly cost him his life?*

I must not dwell in this place on a subject of so confined a nature and so foreign to the present purpose. I will only just add, that the plan of warming as here described would afford a method peculiarly advantageous of airing the cotton wool, which is the great and dangerous article in the Levant trade. Laying the cotton in light strata upon numerous and shallow stages, in sheltered warehouses, occupying the ground-floor of the Cellular part of the building, it might easily be so ordered, by flues or pipes leading from the back part of those stages to the stoves in the Inspection-tower, that not a particle of air should visit the fire in the stoves,

* Howard on Lazaretto, p. 11.

rooms, it expressly orders.* I see no mention in it of powdering-rooms.†

On the common Penitentiary plans each prisoner must at any rate have a sleeping-room to himself.—Why?—Because, being under no sort of inspection or controul during the hours allotted for sleep, which under the common management occupy the greatest part of the twenty-four, even two, much more any greater number, might prompt and assist one another in plotting to escape. But the rooms they sleep in might at some times be too cold for working in, or they would not hold the machines which it is thought advisable to employ, or their work requires that they should be

that had not made its way through the cotton on the stages. The ventilation, besides being so much more perfect, not depending as it must otherwise upon the uncertainties of the weather, the continuance of this irksome and expensive probation might be so much the shorter.

* Not exactly so. Meals, for aught I see, might be made in the working rooms: they cannot, however, in the sleeping-rooms. § 33. I am not certain whether Mr. Blackburn put dining-rooms in his plans: I think I have heard he did. Two Chapels I know he had put in for the National Penitentiary-house: one for each sex: but struck out one of them upon its being suggested to him that it was possible for the two sexes to be in the same place at different times.

† I was once much pressed to put a Tennis-court in my plan: for felons have not less need of exercise than honest men. Powdering-rooms are more common, and would be less expensive.

under the eye of an Inspector, which they cannot be in these rooms. Therefore there are to be other rooms for working in.

Have any notions about health and airiness contributed to this opinion about the necessity of different rooms for the different parts of the twenty-four hours? I am not certain: though something to this effect I think I have observed in the publications of Mr. Howard. But even under the common Penitentiary discipline, I should not think any such multiplication necessary: much less under the plan of management here proposed. To how many hundred thousands of his Majesty's honest subjects is such luxury unknown! Even among persons somewhat above the level of the lowest class, what is more common than to have but one room, not only for one person, but for a whole family, man, wife and children? and not only working, and sleeping and eating, but cooking to be performed in it. Among the Irish cottars, as we learn from Mr. Arthur Young, that is among the bulk of the Irish people, one room is the only receptacle for man, wife, children, dog and swine. Has that one room so much as a single window in it, much less opposite windows, or any aperture but the door? In towns where one room forms the sole dwelling-place of a whole family, has not that room closed windows in it? Is there any commanding power

to enforce the opening of any of those windows? Does not the aversion to cold forbid it? Are they so much as capable of being opened, if at all, for more than half their length?—and that the lower half?*

Let me not be mistaken. Far be it from me to propose the manner in which the common people live through ignorance, as a proper model to be pursued by those who have the good fortune to be possessed of more intelligence. Far be it from me to insinuate that a bad regimen ought to be prescribed only because it is practised. All I mean is, that the degree of airiness most frequent in the dwellings of the greater part of the people is inferior, and much inferior, to that which might be obtained without multiplication of rooms, even according to the hitherto received mode of construction for Penitentiary-houses, and according to the mode of management hitherto pursued in them. In prisons even so managed, the inhabitants would not in this respect be worse off, but much better off, than the common run of men at liberty. Yet

* Were ventilation the object, the upper sash would be the one to open in preference, especially where the highest part of the lower one is not above the level of the organs of respiration. Were it not for accidental gusts, so much of the air as is above the aperture might remain for ever unchanged. It may perhaps have been partly on this consideration that in Mr. Howard's and the Wymondham plans the holes serving for windows are placed so high.

even in this respect how inferior are some of the most approved plans of construction in comparison of the one now proposed! * There, when you shut out rain or snow, you shut out air. There, rain or not rain, windows open or not open, you have fresh air in plenty: in much greater plenty than is usual in a palace.

2. Of such part of the saving as results from the substituting a steady plan of mitigated seclusion in small apartments to an alternation of solitude and promiscuous intercourse, nothing farther need be said here: it has been fully vindicated in a preceding section.

3. Of the waste of room observable in the common plans, a great part is to be placed to the account of *height*. Not more than eleven feet, but not less than nine, is the height prescribed by the Penitentiary Act. † The Wymondham house takes the medium between these two extremes. ‡ Waste it may well be called. I suspected as much at the time of writing the letters. I speak now with decision, and upon the clearest views. In respect of health, height of ceiling is no otherwise of use than as a sort of succedaneum to or means of ventilation. In either view it is beside the purpose: as a succedaneum, inadequate; as a means, unnecessary. If your air in-

* Supra, p. 134. † § 33. ‡ Supra, p. 133.

deed is never to be changed, the more you have of it, the longer you may breath it before you are poisoned: this is all you get by height of ceiling. But so long as it is undergoing an incessant change, what signifies what height you have? Take a Panopticon Penitentiary-house on one hand, and St. Paul's employed as a Penitentiary-Cell, on the other. Let the Panopticon, aired as here proposed to be aired, and warmed as here proposed to be warmed, contain 4 or 500 prisoners. Let St. Paul's, hermetically closed, have but a single man in it. The Panopticon would continue a healthy building as long as it was a building: in St. Paul's the man would die at the end of a known time, as sure as he was put there.*

* In the letter on Hospitals, the Reader may recollect what is said in commendation of an idea of Dr. Marat's with respect to ventilation, and the form of construction proposed by him in consequence. What he says is very just, as far as it goes: but the truth is, that so long as proper air holes are made, and proper means employed for determining the air to pass through them, there is no form but may be made as ventilative and by that means as healthy as his. At that time I had never experienced the heart-felt satisfaction I have since enjoyed, of visiting a London Hospital. I had not then seen either St. Thomas's or Guy's. I had no idea of the simple yet multiplied contrivances for ensuring an unremitted yet imperceptible change of air, nor the exquisite purity and salubrity that is the result of them. If I had, I should little have thought of sending Englishmen to France, or any other country, for Hospital practice or theories of ventilation.

In this one article we may see almost a half added to the expence in waste. Ten foot from floor to ceiling, when less than seven foot would serve ! When less than seven foot does serve, and serves to admiration. I am almost ashamed of the eight foot I ask : it is for the mere look's sake that I ask it. The experiment has been tried : the result is known, though not so well known as it ought to be. Have the *bulks* ten foot of height ? have they eight foot ? have they seven ? I look at Mr. Campbell's *bulks*, and to my utter astonishment I see that nobody dies there. In these receptacles of crowded wretchedness, deaths should naturally be more copious than elsewhere. Instead of that, they are beyond comparison less so.—I speak from the Reports.—I know not the exact proportion : my searches and computations are not yet complete : but as to so much I am certain. I speak of the ordinary rate. Now and then indeed there comes a sad mortality—Why ?—because where pestilence has been imported, hulks neither do nor can afford the means of stopping it. But, bating pestilences, men are immortal there. Among 200, 300, quarter after quarter, I look for deaths, and I find none.—Why ?—because Mr. Campbell is intelligent and careful, Pandora's cordials unknown there, and high ceilings of no use.

This experiment is new matter: it is no fault of the legislators of whom I speak not to have made use of it. In their time it did not exist. How should it? It was this very statute of theirs that produced it. While they were building their Penitentiary-Castle with one hand, they little thought how with the other they were cutting the ground from under it. The information does exist now: the fault will be not theirs but that of their successors, if, like the Wandsworth purchase, the knowledge thus acquired lies in waste.

Mention not the mortalities; it is impossible they can have had the low ceilings for their cause. The mortalities have been rare: for these three or four years none: from that period immortality begins. Have the ceilings been higher since that time; Had Captain Cook ten foot, eight foot, seven foot between decks? Captain Cook, under whom in a voyage that embraced all the climates of the globe, out of 80 men not a single one died in a space of between four and five years:* out of 112 in the same time but five, nor of those more than two in whom the seeds of death had not been sown before their embarkation.

What was your National Penitentiary-house to have cost?—£120,000.—How many was it to have

* Four years, two months and 22 days. See Cook's Second Voyage. Introduction.

holden?—960.—What did your Liverpool Jail cost? About £28,000—How many will that hold?—270.—What?—make the nation pay £120 for what you have done for £100. How comes that about?—How? why from the Act. The Act will have high ceilings—how could I lower them? The Act will have spacious rooms—how could I narrow them? The King was to pay for every thing: Every thing was accordingly to be upon a royal scale. At Liverpool it was otherwise: those who ordered were to pay.—Such was the purport of a conversation I had with Mr. Blackburn.

END OF PART I.—POSTSCRIPT.

Bentham, Jeremy,

Panopticon: Postscript

Bd.: Part 1

London 1791

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